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China Report

AGRICULTURE



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15 OCTOBER 1986

CHINA REPORT

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CONTENTS

PEOPLE'S REPUBLIC OF CHINA

NATIONAL

Meeting Goal To Increase Farm Machine Exports Encouraged (NONGJIHUA BAO, 15 Jan 86)	1
Agricultural Uses of Foreign Capital Discussed (Li Baixiang; JINGJI RIBAO, 21 May 86)	4
Developments in State Farms During Sixth 5-Year Plan (ZHONGGUO NONGKEN, No 12, 24 Dec 85)	6
Peasant Net Income Reported for 1985 (Long Chun; JINGJI RIBAO, 29 Apr 86)	9
Growth of Rural Tertiary Industries Discussed (JINGJI RIBAO, 30 May 86)	11
Reforms in Rural Land Ownership Proposed (Li Qingzeng; NONGYE JINGJI WENTI, No 4, 23 Apr 86)	13
Growth in Rural Commodity Economy Discussed (RENMIN RIBAO, 6 Jun 86)	18
Feed Supply, Sale Price Problems Affect Pig Production (NONGMIN RIBAO, 3 Jun 86)	20
Transformation of Water Conservancy Advocated (Zhang Qiu; JINGJI RIBAO, 14 Jun 86)	22
Chinese First Quarter Aquatic Products Up 23.3 Percent (Li Jun; ZHONGGUO SHANGYE BAO, 12 Jun 86)	27

Exploiting Cultivable Seashore for Coastal Area Development (Xiao Peng; NONGYE JISHU JINGJI, No 3, Mar 86)	29
Experts Say Huang He Will Not Change Course (XINHUA, 16 Sep 86)	39
TRANSPROVINCIAL AFFAIRS	
Investment Increases, Production Changes Noted (NONGCUN GONGZUO TONGXUN, No 5, 5 May 86)	41
Rapeseed Harvest Outlook Termed 'Pleasing' (Yin Bangliang, et al.; NONGMIN RIBAO, 12 May 86)	43
Briefs Conference Urges Farmer Aid	45
BEIJING	
Briefs Mayor on Boosting Food Industry	46
GUIZHOU	
Briefs Science Training Upgrades Output	47
HEBEI	
Corn Export Effects on Stock Production Analyzed (Shi Xizhi; ZHONGGUO SHANGYE BAO, 15 May 86)	48
Interview on Fertilizer Production, Sales, Usage (HEBEI RIBAO, 16 May 86)	49
Briefs Wheat Procurement	53
HEILONGJIANG	
Farm Mechanization Reform Discussed by Former Official (Ma Jing Interview; NONGCUN FAZHAN YANJIU, No 3, 1986)	54
Results Assessed on State Farm Management Reforms (Wang Laixi, Peng Yi; RENMIN RIBAO, 10 May 86)	60
Briefs Wheat Procurement	64
Wheat Harvest	64

HENAN		
	Briefs	
	Commercial Food Grain Bases	65
HUBEI		
	Briefs	
	Water Conservancy Projects	66
HUNAN		
	Special Loans for Grain Farmers Announced	
	(Li Lingming; HUNAN NONGYE, No 5, 1 May 86)	67
	Briefs	
	Combatting Drought	68
	Grain Procurement	68
JILIN		
	Briefs	
	Tractor Use	69
NINGXIA		
	Briefs	
	Irrigation System	70
SHAANXI		
	Briefs	
	Fertilizer Shortage	71
SHANDONG		
	Gains Ascribed Partly to Better Farming Techniques	
	(Chai Langao; NONGYE KEJI TONGXUN, No 4, 17 Apr 86)	72
YUNNAN		
	Briefs	
	Yunnan Livestock Production	76
/9987		

MEETING GOAL TO INCREASE FARM MACHINE EXPORTS ENCOURAGED

Beijing NONGJIHUA BAO in Chinese 15 Jan 86 p 1

[Interview: "Grasp Well Beginning Steps, Lay Well the Foundation for Realizing Exports Plan of the 7th 5-Year Plan Period"]

[Text] Most recently, the State Council approved and transmitted the report by eight departments of the State Economic Commission on expanding the export of our electrical and mechanical products. At the beginning of the new year, deputy manager Jiang Chengxun [1203 2110 8113] of the China Farm Machine Import and Export Corporation has, in response to our newspaper's request, discussed his reflections and plans in this regard.

[Question] The State Council has most recently approved and transmitted the report by eight departments of the State Planning Commission on expanding the export of our electrical and mechanical products, which clearly points out that the export of our electrical and mechanical products occupies an extraordinarily important spot in the developmental strategy of our economy. On this, what reflections do you have?

[Answer] There is strategic significance in the State Council's approval and transmission of this report insofar as changing the backward state of the structure of our export products and improving the technology of our electrical and mechanical industry and level of its management are concerned.

Farm machine exports are a component part of our electrical and mechanical products exports. Since the Third Plenary Session of the 11th Party Central Committee, they have at one point developed rather fast. During the past 2 or 3 years, because our marketable small-size commodities are not so numerous and the international market was undergoing considerable changes, and because, in addition, our sales efforts were not so vigorous, there has been a tendency of stagnation and vacillation in the volume of our exports. The ratio of our farm machine exports is rather small in the volume of our electrical and mechanical exports; this is not quite in proportion to the existing production scale and capacity of our farm machinery industry. Hence, the vast ranks of the production enterprises and exports departments in our farm machinery industry should seriously study and implement the spirit of the State Council

Document No 128, adopt various effective measures, quickly make a go of our farm machine exporting in order to realize the target of our farm machine export volume reaching \$100 million by 1990.

[Question] What plans do you have on realizing the target of our farm machine exporting under the 7th 5-Year Plan?

[Answer]: In order to realize the target of our farm machine export plan under the 7th 5-Year Plan, we shall strive in 1986 to make good beginning steps and we must pay attention to doing the following good jobs:

We must continue to improve the quality of such traditional export products as small generators, power generation assembling units, gears for vessels, and processing machines for agricultural and sideline products so as to consolidate our old market. We must implement as soon as possible our export quality permit system in order to prevent the flow of products of low quality and high price into the international market. We must expand our production capacity for automatic power generation assembling units, powered and broad-margin rotary hand tractors, and four-wheel driven-wheel tractors. We must earnestly adopt measures, improve our craftsmanship, ameliorate the quality of our painted and electroplated products, so as to change the outlook of our export commodities in the international market.

We must demonstrate the production potential of our farm machinery industry, adopt flexible forms of production and organization, import and produce farm machine products of a lower technology-intensive level discarded by the developed countries but which can still sell on the international market. In the beginning, we may accept first some prototypes or processing of parts and gradually proceed toward the processing of whole machines. We must work toward attaining international standards and, in response to the different requirements in the international market and improve our products by making them leak-proof, pollution-free, shock-proof, heat resistant, secure, and less noisy.

We must digest advanced technologies we have already imported, and produce as soon as possible advanced products, so that we can create results for our factories ahead of time and also enhance our exports and foreign exchange creation capability for the state.

Pay close attention to international bidding for key construction projects in China, make use of our existing products or produce them jointly with reputable foreign factories and business people in order to participate in such bidding, and make use of time, geography, manpower and various beneficial conditions; so long as we do our work early and carefully, we should enjoy plenty of opportunities to win such bidding.

Once we can handle well the tasks mentioned above, we can not only ensure the fulfillment of targets for farm machine exports for 1986; we can also realize a strong foundation for our goal of quadrupling our farm machine exports during the 7th 5-Year Plan.

[Question] How are we going to mobilize the enthusiasm of enterprises and export departments of our farm machine industry so as to expand the export of our electrical and mechanical products?

[Answer] State Council Document No 128 also provides 10 decisions on expanding the export of our electrical and mechanical products. Along with launching of these concrete measures for implementing a policy that is designed to support and encourage exports, we shall to a very great extent mobilize the enthusiasm of our farm machine production enterprises and export departments. We must maintain the enthusiasm of the vast ranks of our production enterprises in expanding their exports in a sustained way, coordinate and be consistent with the export departments, straighten out our farm machine exporting system, and establish an exports production system. All of these are very important. We must strive for coordination between industry and trade, and technology and trade, create several export -creating enterprises and expand the number of enterprises with foreign trade autonomy. We must let even more large and medium-size enterprises shoulder export tasks, let even more medium and small-size enterprises step forward to the frontline of foreign trade so that they will form a jointly run multi-level farm machine exporting group, and thereby enhance our capability in competition in the international market. Thus, our farm machine export prospects are bright.

9255

CSO: 4007/262

AGRICULTURAL USES OF FOREIGN CAPITAL DISCUSSED

Beijing JINGJI RIBAO in Chinese 21 May 86 p 2

[Article by Li Baixiang [2621 4102 4382]: "Agricultural Uses for Foreign Capital Now Exist and Are Growing Rapidly"]

[Text] During the Sixth Five-year Plan, China moved from not using to using some foreign capital in agriculture, and uses are now expanding rapidly. The total sum is now nearly 2 billion dollars. There are three major sources of foreign capital used in agriculture. First of all, we use World Bank credit: we have arranged to ameliorate salinity and alkalinity on the North China Plain, organize agricultural education and scientific research, reclaim land for Heilongjiang state farms, renew rubber cultivation in Guangdong, breed and process crop seed, build up forestry, complete facilities and obtain intermediate agricultural credit in Anhui's Pi (Pi He), Shi (Shi He), and Hang (Hangbu He) Irrigation Districts, and so forth, for a total in excess of 700 million dollars. In general, these major projects are all proceeding smoothly. For example, a loan of 60 million dollars has been extended to ameliorate salinity and alkalinity in the Huanghe-Huaihe-Haihe region. Since it was put into effect in 1982 (the project is now essentially complete), controls have begun to show results on 3 million mu of easily waterlogged, easily parched, low-yield land distributed over 3 provinces and 9 counties. Farmland irrigation conditions within the project area are notably improved; soil fertility has increased universally, and unit crop yields and gross yields have risen 10 to 40 percent. Within the project area, township enterprises, county-run industries, and specialized households are more numerous than in non-project areas. The first phase loan of 75.4 million dollars for agricultural education and scientific research has been used primarily to replace instruments and equipment and renew training for talented personnel at the 18 key colleges and scientific research units involving agriculture, animal husbandry, and fishery; forestry; water conservancy; and meteorology. This has brought major instruments and equipment at these units up to the standards of the 1980's, and there are now 400-plus individuals studying for advanced or specialized degrees abroad.

The second source of foreign capital used in agriculture is credit and aid supplied by the FAO, the World Grain Program, the UN Development Program, and the International Agricultural Development Fund. For example, the Hebei

Agricultural Technology Development Project borrowed 25 million dollars to control salinity and alkalinity on 600,000 mu of land. Hubei's Agricultural Development Project transferred credit from the Agricultural Bank to producers to develop fishery. Six major cities, including Beijing, Shanghai, and Tianjin, received material aid for dairy projects and thus resolved milk supply problems. Impoverished regions--Gansu, Ningxia, and Shaanxi--have also independently made use of internationally organized aid funds to undertake water conservancy, hydroelectric projects, grass cultivation, road repair, afforestation, and other construction to improve agricultural production conditions. All have had good effects.

The third source of foreign capital used in agriculture is bilateral cooperation. Via consultation and mutuality, governments and organizations from several tens of nations have arranged to provide China with loans or gifts. For example, the Jilin Project to Increase Paddy Yield has used grain-yield improvement aid funds provided by the Japanese government to introduce techniques for breeding rice in flats and for transplanting by machine. There are obvious results in increased yields, and the program is worth extending into the cool northern regions of China, where cold damages are severe.

Officials in the departments concerned indicate that during the Seventh Five-year Plan agricultural uses of foreign capital will grow more diverse, more multi-leveled, and more multi-channeled. Cooperative, joint capital, and compensation lease projects will increase as time goes on.

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CSO/ 4007/426

DEVELOPMENTS IN STATE FARMS DURING SIXTH 5-YEAR PLAN

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION] in Chinese No 12, 24 Dec 85 pp 1, 29

[Summary by staff reporter: "The Sixth 5-Year Plan Was the Best Period of Development for State Farms and Land Reclamation; A Discussion on the Good Situation in State Farm and Land Reclamation Reform"]

[Text] The nation's state farm and land reclamation system attained marked results during the Sixth 5-Year Plan. This was because of reforms carried out by the central authorities and the State Council, opening up to the outside world, flexible policies, and three major reforms: contracting property, developing enterprises combining agriculture, industry, and commerce, and the development of family farms among staff and workers. Marked results were attained during the period of the Sixth 5-Year Plan in the economic construction of state farms and land reclamation. During this period the old economic system gave way to a new one and a transition was made from the old economic development model to a new one.

The Economy Developed in a Sustained, Steady, and Coordinated Manner

The gross value of industrial and agricultural output in the nation's state farms and land reclamation system is estimated to be 15.9 billion yuan in 1985, an increase of 60 percent over that of 1980. This rate amounts to an average of 10 percent growth each year during the five years. Industrial output value is estimated to have been 8 billion yuan, doubled that of 1980. The productivity rate of all labor and personnel involved is estimated to have been 3,146 yuan, 55 percent higher than in 1980. The annual average over the five years was 9.2 percent. We have realized increases in both output value and labor productivity. Profit is estimated to have been 700 million yuan and every year of the five years realized a profit. Total profit over the 5 years was 3.3 billion yuan and we saw a fundamental turnaround in the long-term losses that had been the situation previously..

Readjustment in Industrial Structure Has Scored Preliminary Results

State farm and land reclamation enterprises in the various localities have carried out readjustment of the structure of their industries according to 4 different levels: The first level is to break the convention of "taking

foodgrain as the key link" within the planting and breeding enterprises and, under the premise of never relaxing foodgrain production, develop economic crops. The second level is to increase the proportions of forestry, animal husbandry, sideline enterprises and fishery respectively within agriculture. The third level is to energetically increase the proportion of industrial output value. The fourth level is to actively develop tertiary industries. The proportions of forestry, animal husbandry, sideline enterprises and fishery were, in 1980, 37.8 percent; by 1985 they had increased to 40 percent. During the 6th 5-Year Plan period, there were cultivated altogether 7.05 million mu of forestry, equivalent to the total area cultivated during the 31-year period prior to 1980; the ratio between industrial output value and agricultural output value was readjusted from 4:6 in 1980 to 5:5 in 1985. This readjustment of the structure of industries has greatly enhanced our economic results; during 1981-1985, profits from the industries alone amounted to 3.1 billion yuan.

Implementation of the Economic Responsibility System Has Mobilized Enthusiasm

After the state farm and land reclamation enterprises started to carry out the contracting-out of their financial affairs work in 1979, all trases and professions have gradually carried out the economic responsibility system with joint contracting for production as its principal form and thus mobilized the enthusiasm of the masses of their staff and workers. Since 1983, they have already established more than 810,000 staff and worker family farms of various types: participating staff and workers have made up more than 80 percent; this has served to change the highly centralized farm-managing model, realize the dual-farm management system of large farms being linked to small ones, and thereby maintain the superiority of uniform management for state farms on the one hand and mobilize the enthusiasm of separate management for family farms. In the Xinjiang reclamation area, funds raised by family farms in 1984 amounted to 7.54 million yuan. They bought machines and other equipment for themselves, repaired their small-scale irrigation works by themselves, devoted efforts to exploitative production, and succeeded in reclaiming 69,000 mu of barren land, restoring 46,000 mu of abandoned land, and exploiting and utilizing 10,000 mu of water areas. Since the Heilongjiang reclamation area established its family farms, its staff and workers have raised 40 million yuan of capital. Of this half consists of original deposits by the staff and workers. They have altogether equipped themselves with more than 740 tractors, more than 1,970 rubber-tire tractors, 200 harvesters, and more than 400 vehicles.

Enlivening the Economy by Coordinating Domestically and Importing from the Outside

In running its agricultural-industrial-commercial joint enterprises, the state farm and land reclamation system has broken the barriers between regional and departmental ownership, broadly developed economic combinations, and established 16,000 such enterprises. During the 6th 5-Year Plan period, the system has taken advantage of foreign capital and 62 imported technological projects and imported 260 million yuan of foreign capital in foreign

currencies. Thus coordinating domestically and importing from the outside have enabled our state farm and land reclamation economy to become enlivened and play an important role in the improvement of our economic results.

A Batch of Core Projects Has Been Constructed

During the 6th 5-Year Plan period, the various reclaiming areas have strategically constructed a batch of core projects and works, newly increased the area of our arable land by 3.5 million mu, enlarged our effective irrigation area by 2.9 million mu, steadily planted 1.08 million mu of rubber, constructed 10,000 kilometers of highways and power transmission-transformation routes respectively, newly built a power station (with 6,000 kilowatts of equipment capacity installed therein), established 16 paper mills, newly built or rebuilt 6 large and medium-size sugar mills, 13 cotton and textile mills, 18 cement plants, and 20 coal mines and thus accumulated considerable stamina for the development of our economy hereafter.

Scientific, Technological and Cultural Enterprises Have Gained Great Development

During the past few years, among achievements of the state farm and land reclamation system that won the state's natural science invention awards was the "Liaoning Reclamation Area No 5" fine rice species successfully transferred north and cultivated there. Scientific and technological achievements promoted and applied by the various reclamation areas have numbered more than 1,000. The output value increase won by the application of these scientific and technological achievements made up more than 20 percent of the overall output value. Various vocational institutions of higher learning within the system have developed to 12; and secondary colleges, 20. During the past 4 years they have trained 7,000 graduates from college and secondary institutions, with cadres of various levels and categories participating in such training making up 58 percent of the total.

Level of Living Conditions of Staff and Workers Has Greatly Improved

Along with the development of our production and improvement of our economic results, the living conditions of staff and workers of the agricultural and land reclamation enterprises have likewise greatly improved; the annual average income of each staff member or worker has increased from the 640 yuan of 1980 to the 800 yuan of 1985, an increase of 25 percent. During 1981-1984, newly built staff and worker dormitories amounted to 14.18 million square meters, with per person average housing space reaching 7 square meters.

9255

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PEASANT NET INCOME REPORTED FOR 1985

Beijing [JINGJI RIBAO] in Chinese 29 Apr 86 p 1

[Article by Long Chun [7893 2504]: "Average Net Income for Chinese Peasants in 1985 Was Nearly 400 Yuan, Up 11.9 Percent Over 1984; The Degree of Discrepancy Between the East, the Interior, and the West Is Shrinking"]

[Text] The State Statistics Bureau's general rural sampling survey team surveyed over 66,600 rural households in 29 provinces, autonomous regions, and municipalities. This sampling revealed that except for a slight decline in average net income in the three northeastern provinces hit by severe natural disasters, there was in 1975, a general increase nationwide in average net income among peasants. The national average net peasant income reached 397 yuan 6 jiao, up 11.9 percent over 1984. The degree of discrepancy between average net peasant incomes in the eastern, western, and central sections of the country, three different economic zones, is now shrinking.

In 1985 the average net peasant income in the eastern, central, and western economic zones were 462 yuan 7 jiao, 388 yuan 6 jiao, and 321 yuan 7 jiao, respectively. The major reason for the rather large discrepancy in peasant incomes is that in the eastern region the portions of peasant household income from united collective operations, economic associations, household operations, and other sources are all higher than in the central and western sections of the country. This is primarily reflected as follows:

In the eastern section the countryside is close to medium and large cities, transportation is well developed, information is readily available, the level of cultural and scientific technology is quite high, and township enterprises grow rapidly. In 1985 in eastern region households an average of 5 out of every 100 residents participated in township enterprise production. The average income accruing directly to peasants engaged in township enterprises was 38 yuan, which is 1.1 times higher than the national average, 3.3 times higher than in the central section of the country, and 7 times higher than in the western region. Township enterprises have already become a major source of peasant income.

In the eastern zone commodity production managed by peasant households has grown rapidly.

In the eastern region the level of development in peasant household-operated secondary and tertiary industries is higher than in the central area or the western region. In the eastern economic zone, income to peasant households engaged in household industry, construction, transportation, commercial food services, service work, and other secondary and tertiary industries averages 88 yuan 1 jiao per person, accounting for 17.7 percent of household income. Income to peasant households operating secondary and tertiary industries averages 62 yuan 6 jiao per person in the central region, or 13.1 percent of household income, and 57 yuan 4 jiao per person in the western region, or 14.5 percent of household income.

In recent years the pace of rural economic growth has accelerated in the western region: in 1985 peasant income there rose faster than it did in the eastern region. The central section of the country is in a transitional zone, and its rate of increase in peasant income lies between the other two. An overall survey shows that the degree of discrepancy between peasant income levels in these three economic zones is on a declining trend. Survey data indicates that since 1984 the average net peasant income in the western economic zone has risen 14.9 percent, in the central section it has risen 9.5 percent, and in the eastern zone it has grown 9.4 percent. The rate of increase is notably higher in the western region than in the eastern or central regions.

The reduced degree of discrepancy between peasant incomes in different economic zones is of major political and economic significance. It indicates that satisfactory momentum has appeared in the Chinese rural economy, advancing from the eastern region to the central and western regions, so that the individual economic zones are developing together.

12510

CSO: 4007/426

GROWTH OF RURAL TERTIARY INDUSTRIES DISCUSSED

Beijing JINGJI RIBAO in Chinese 30 May 86 p 3

[Article: "Rural Tertiary Industries Develop Rapidly in China"]

[Text] Recently, the State Statistics Bureau's general rural sampling team conducted a rural economic survey in 1,927 townships throughout 577 counties in 22 provinces, cities, and autonomous regions. The survey indicated that rural tertiary industry developed rapidly in 1985. On average, each township has 29.3 tertiary industries, including communications and transport industries, commercial food services and food storage operations, neighborhood services, educational, cultural, and arts facilities, health and sports facilities, social welfare services, and others, operated in each township. Chief among these, 18.7 units are run by peasant households, 7 units are run by townships, 2.4 are run by primary-level villages, 0.2 are run by small groups of villagers, 0.7 are run by new economic organizations, and 0.3 are run by party and government departments and mass organizations. Personnel engaged in tertiary industries account for 13.4 percent of the total township labor force surveyed. There are an average 1.6 personnel per unit and each unit possesses fixed assets with an average original value of 3,651 yuan. The major features of development in rural tertiary industry are as follows:

The Development Trend Is Toward Multi-level, Diverse Industries

Social and economic services in the countryside have received attention from all sides. A gratifying trend has developed toward multi-level initiation of tertiary industries, involving townships, villages, groups, new economic associations, and peasant households with party and government departments and mass organizations. From the perspective of the composition of trades within tertiary industry, there are diverse kinds. In average township tertiary industries are comprised of 37.8 percent communications, transportation, postal, and telecommunications services; 27.3 percent food services and grain storage facilities; 12.1 percent neighborhood services; 9.5 percent cultural, educational, and arts facilities; 7.9 percent health, sports, and social welfare facilities; and 5.4 percent other institutions.

Tertiary Industries Run by Peasant Households Have Become a Major Component

Tertiary industries run by peasant households constitute 95.9 percent of all

rural tertiary industries, and they account for 88.4 percent of the personnel, 85.3 percent of the original fixed asset value, 87.4 percent of the income, 91.4 percent of the employee remuneration, and 90.1 percent of the state tax payments for all rural tertiary industries.

Circulation and Service Fields Dominate

In the average township, communications, transportation, postal, and telecommunications services on the one hand, and commercial food services and grain storage facilities on the other hand, respectively account for 47.4 percent and 26.4 percent of all tertiary industries. Within tertiary industries they respectively account for 41.7 and 23.5 percent of all personnel, 76.3 and 10.6 percent of all fixed assets, 55.8 and 29.9 percent of gross income, 59.2 and 23.2 percent of employee remuneration, and 63 and 25.5 percent of tax payments. In tertiary industrial services, communications, transportation, postal, and telecommunications services earn the highest incomes: in the average township the net income per capita therein is 40.2 percent higher and state tax payment is 50.8 percent higher than in tertiary industry as a whole.

Right now, the kinds of rural tertiary industry are not developing evenly everywhere and do not meet social service needs. In many localities it is still difficult to get a ride, transport freight, get into school, see a doctor, or be hospitalized. Scientific and technical advice is also limited. These are all problems that remain to be resolved in the future development of rural tertiary industries.

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CSO: 4007/426

REFORMS IN RURAL LAND OWNERSHIP PROPOSED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 4, 23 Apr 86 pp 26-28

[Article by Li Qingzeng [2621 1987 2582], Chinese Academy of Social Sciences Rural Development Institute: "A Discussion on Reforming the Structure of Rural Land Ownership in China"]

[Text] Following the implementation of assorted contract systems in the countryside, changes in the rural ownership system are also intensifying day by day. The collective economy, particularly growth in the proportion of individual economy, is the primary component of these changes, and this has allowed multi-level development to emerge in the rural ownership structure. Right now, the objective reality of rural economic growth has raised further questions that require us to make theoretical responses and provide practical solutions. One of these questions concerns reform in the land ownership structure.

I. After the output-related system of contracted responsibility was put into effect major changes occurred in rural land relationships.

A split occurred between land ownership rights and land use rights. According to statistics, under various output-related systems of contracted responsibility 99 percent of all teams nationwide and 96.9 percent of all rural households are contracting to complete large-scale tasks. A trend of collective ownership and separate household management has emerged. In those impoverished communes and brigades that originally had nothing to hand over to higher authorities and no accumulated funds, after separation into household management a farmer's income from managing the land is still entirely his own gain. There, collective land ownership is merely a leftover empty shell. Economically there is no way collective land ownership can be realized there in practical terms, and all they have is a fixed legal symbol: peasants are not permitted to buy or sell land. Furthermore, following the emergence of compensatory contract transfer on land, when a peasant becomes a de facto land owner he can acquire a contractor's fee. Land ownership rights are realized through the peasant.

II. In most communes and teams in the Chinese countryside, out of income from land management the peasant must not only maintain himself, but also deliver a portion to the state and the collective.

Here, though land ownership rights have become an economic reality, land ownership rights and land use rights have not been completely separated. However, fundamental changes are also now occurring in this situation.

III. Previously, the state carried out policies assigning state procurement quotas for grain and other major farm and sideline products. Under those circumstances the peasants had to rely on contracts to sell agricultural and sideline products to the state.

This peasant obligation to the state and collective is in reality the economic realization of land ownership rights. And now, reforms are being instituted in state policies on farm and sideline product procurement: assigned state procurement quotas are being changed into fixed contract purchasing. Thus, rural households are no longer responsible for completing the task for the unit issuing the contract, rather they sign purchase and sales contracts directly with the food sector and other commercial sectors. This is an ordinary business contract--a kind of economic deal between commercial producers--and there is nothing in it that affects land ownership rights. That is to say, the degree of separation between land ownership rights and land use rights is growing larger and larger.

IV. As the degree of separation between "the two rights" intensifies, a series of disadvantages accrues.

Looking at the owner's position, land management grows more slipshod as time goes on, an enormous quantity of arable land is occupied for other uses, and land fertility declines. From the user's point of view, the low initiative for land investment adversely affects benefits of scale accruing to the land manager. Now, although we have adopted certain measures to reverse the above situation (such as lengthening the land contract period and permitting land contract transfers, as well as adopting some corresponding administrative measures to tighten controls on occupations of arable land for other uses), results have been less than ideal. Under these circumstances, some comrades advocate adopting a land rental system--changing the de facto free use of land under the contract system into a rental system that charges a fee for land use. They feel that this method would both strengthen socialist public ownership and enable us to surmount the above-mentioned disadvantages. Of course a fee for land use will really put pressure on producers, and this kind of pressure can also be turned into a motive force for farmers. However, in reality the vast majority of farmers in China cannot offer any rent. People spend all day farming the land and everything they earn only maintains their subsistence. In their point of view we cannot find any better employment situation than what they have now. Since the majority of land cannot furnish rent, what use is there in talking about a rental system?

Other comrades advocate evaluating land in monetary terms or returning it to the households without charge. They feel that returning land to the

households would reunite land ownership rights and land use rights and thus avoid the occurrence of the trend mentioned above. Of course, Marxism does not completely reject private land ownership. Particularly in small agricultural nations, after the proletariat seizes power private land ownership and usage can be entirely permitted. We can see this view in "The Problems of the French and German Peasantry." Even in Soviet Russian practice we can also observe that in the few years after land nationalization was declared private buying and selling of land was again permitted. This constitutes de facto recognition of peasant land ownership rights. However, we should also be aware that, in the final analysis, permitting private land ownership is an interim measure. China is a socialist nation and has undergone 30-plus years of socialist construction. The collective economy in many localities remains very powerful: this bears practical testimony to the validity of collective ownership of rural land and other principal means of production in China. Consequently, from either a theoretical or a practical standpoint, private ownership of all land will not work.

Naturally, in dealing with land problems there are also some other opinions. One, for example, suggests we carry out land nationalization and permit peasants to freely buy or sell any increment in land fertility when transferring land management rights. However, neither land nationalization nor commercialization of land management can fundamentally resolve the above problems. Where, then, lies the answer?

V. I feel that the answer lies in readjusting the current structure of land ownership: given that we preserve state and collective land ownership, we should acknowledge individual peasant ownership of some land.

Specifically, none of the land ownership rights clearly under state control would change, but land originally turned over to the collectives would be divided into three parts: public land (including land occupied by village buildings, roads, and water conservancy facilities), wasteland (all land uncultivated prior to the institution of contract systems), and cultivated land. The two former types of land would remain under collective ownership and readjustments would involve only cultivated land. Cultivated land could also be divided into two parts: grain-ration land would largely return to peasant ownership (I call these private fields for short), and land under the responsibility system would remain in collective control (I call these public fields for short). Through readjustment, the unitary system of collective rural land ownership would become a bi-level system of collective and individual land ownership (called the revised land system for short).

VI. Obvious social results and direct economic benefits are inherent in the revised land system:

1. It is conducive to improvement in soil fertility. Peasants consciously make land investments on private fields; simultaneously, because bidding is invited on large plots of public land it is convenient for land supervision and management. In addition, applying rewards and penalties and implementing auxiliary measures for increases and decreases in soil fertility will permit general controls on predatory management practices.

2. It is conducive to the accrual of benefits of scale in land management. The rental of large plots of public land is itself conducive to bringing about benefits of scale. Limited sales, rentals, or transfers of private fields can also progressively concentrate the land in the hands of farming experts. However, it must be pointed out that due to several factors (the socialist system, the traditional mentality of the peasantry, the scattered distribution of private fields, and so forth) this concentration will not occur rapidly.

3. It is conducive to gaining even more agricultural products. The revised land system ensures collective ownership of public fields and also in practice provides a reliable foundation for rural commodity production. Furthermore, in the wake of improved production results on public fields, the agricultural and sideline products the state obtains through various channels increase as time goes on and there is no way they can decline. In addition, under intensive farming by peasants, private fields can also supply more and more commodities over time. This, then, promotes growth in rural commodity production and accelerates the transformation of the natural economy into a commodity economy.

4. The revised land system cannot damage consolidation in the socialist public ownership system. State ownership rights would not change and the collectives would retain their former control of publicly used land, wasteland, and fields under the responsibility system. Preservation of these two features also essentially ensures socialist public ownership of land as a means of production. Peasants would own only former grain-ration fields. In localities where the land produces a relative abundance, the land area owned by peasants would be extremely small and under most circumstances would include only low-grade cultivated land. (This low-grade land is not the same as the concept delineated in Marx' theory of ground rent: in Marx' theory low-grade land is still used for commodity production. Under the effects of the law of average profit, through commodity sales the farmers must not only be able to pay the workers' wages, they must simultaneously acquire for themselves an average profit. The low-grade land I refer to can only maintain the farmers' subsistence.) Furthermore, the establishment of a socialist public ownership system is not a goal, rather it is a means of developing a socialist commodity economy. If these lands, which could not originally supply commodities but could only maintain the farmers' own consumption, were to be withdrawn from the "ranks" of socialist public ownership, not only would no damage be done to the growth of the socialist economy, but in fact that growth might be accelerated. Therefore, why must we hold back these lands in their hollow original form? If we say that through the revised land system the relations of production will better meet the needs of growth in the forces of production, then we can say that the revised land system not only will not damage the consolidation of socialist public ownership, it will actually further perfect it.

VII. As we have discussed above, the revised land system will involve only cultivated land, and ownership of public land and wasteland will not be modified. Why is this?

First of all, public ownership of roads, water conservancy facilities, and other rural public installations is conducive to the construction of basic

rural facilities. This promotes the formation of rural social service systems concerned with production and daily life, and advances the development of a specialized division of labor. Second, land resources--barren hills, wasteland, sand flats, and other land that has yet to be developed and utilized--cover a large area and are widely scattered. Public ownership of these lands is convenient for state management. Furthermore, we can completely arouse peasant initiative for developmental farming by utilizing long-term lease periods, reduced rents and taxes, and other means.

VIII. Work on the revised land system should go through two phases: a phase of testing and perfecting measures, and a phase to disseminate and further perfect them.

In the experimental phase, we must first select certain individual test sites in different types of areas around the country. At each test site work on readjusting the land system must heed the opinions of the many cadres and broad masses, and the initial program must be formulated on an extensive foundation of investigative research. In the process of implementation, we must analyze experiences as we revise specific measures. The work at the various test sites need not be synchronized, and specific measures may differ. We cannot impose arbitrary uniformity.

On the basis of trials, the departments concerned should formulate fundamental measures and policies, and, based on the above attitude and in light of the actual local situation, each locality should correspondingly formulate a specific program to put into effect. In practice, moreover, the program should be constantly perfected. Finally, based on a review experience in the task throughout the country, we should establish a land management system suited to the demands of the new situation and perfect corresponding land management mechanisms.

12510

CSO: 4007/425

GROWTH IN RURAL COMMODITY ECONOMY DISCUSSED

Beijing RENMIN RIBAO in Chinese 6 Jun 86 p 1

[Article: Steady Growth Accompanies Reform in the Rural Commodity Economy: In 1985 the Ratio of Marketable Industrial and Agricultural Products Reached 63.9 Percent; The Number of Products Sold Per Laborer Rose 25.8 Percent Over 1984"]

[Text] Stimulated by reform, the rural commodity economy in China is irreversibly and steadily moving forward. The State Statistics Bureau's most recent statistical data show that in 1985 the rural commodity economy made rapid progress in the wake of major strides in readjusting rural industrial composition and reforming the system of state-assigned procurement quotas for agricultural products. This is primarily manifested in the following areas:

1. The diversified economy has grown and the degree of commercialization has improved. In readjusting industrial composition, we have taken special care to coordinate planting industry relations with forestry, animal husbandry, and fishery, as well as with rural industrial, construction, transport, and commercial services, thus promoting the growth of a diversified economy. Calculated based on comparable prices, in 1985 the gross value of agricultural output (not including industry at or below the village level) rose 3.4 percent over the previous year. Of this, the output value for agricultural crops in the planting industry jumped 25.6 percent over 1984 (this includes oil-bearing crops, fiber crops, leaf tobacco, sugar crops, vegetables, and tea leaves, but excludes grain and cotton, for which production declined substantially). Output values in animal husbandry, fishery, forestry, and sidelines rose 17.2 percent, 18.8 percent, 4.5 percent, and 20.6 percent, respectively. The value of rural industrial output in 1985 rose 50.7 percent over 1984 and increased from 22.9 percent to 27.6 percent of the gross value of social production in the countryside.

In the wake of growth in the diversified economy, relaxed restrictions in the system for buying and selling farm and sideline products, and increases in the number of products offered for sale in the countryside, the percentage of marketable products has improved. After deducting price increase factors, in 1985 total rural sales of farm and sideline products and industrial goods nationwide was up 18.5 percent over the previous year. The ratio of marketable rural industrial and agricultural products rose from 61 percent in

1984 to 63.9 percent in 1985. Of this, the ratio of marketable farm and sideline products increased from 52.7 percent to 53.9 percent and the ratio of marketable industrial goods rose from 83.7 percent to 84.6 percent. Progress in commercialization is obvious.

2. The average number of products supplied to society per rural laborer increased significantly, and labor productivity, which provides a measure of the quantity of commodities, also rose. In 1985 the rural commodity economy grew rather rapidly: the average number of products sold per rural laborer was up 25.8 percent over 1984, and of this, the number of farm and sideline products sold to the state per rural laborer rose 13.2 percent. Excluding grain, which declined somewhat, the major material agricultural goods sold to the state--cooking oil, meat products, egg products, and aquatic products--all increased by a fairly large margin. The quantity of grain sold to the state fell from 652 jin to 582 jin; edible vegetable oil rose from 17.5 jin to 22.2 jin; pork, beef and mutton rose from 41.7 jin to 54.8 jin; fresh eggs increased from 8.2 jin to 10.1 jin; and aquatic products rose from 17.1 jin to 18 jin. The improvement in rural labor productivity, which provides a measure of the quantity of commodities, demonstrates that the Chinese countryside is beginning to depart from traditional agriculture. In addition, new changes have taken place in the countryside in circulation links and among units engaged in commodity production. For example, without exception township and village enterprises have expanded in scale and township-run enterprises have developed rapidly. In 1985 the average start-up value of fixed assets commanded by enterprises at the township and village levels rose 37.1 percent, and the average number of personnel per enterprise grew 13.7 percent. Our capacity for processing farm and sideline products improved and the number of personnel engaged in processing jumped 15.4 percent. Rural transport conditions improved and our freight capacity has increased notably. There are now nearly 600,000 specialized households engaged in transport nationwide, accounting for 1.2 percent of the rural labor force. More than 60,000 trucks and nearly 4 million tractors of every description are owned by individual rural families, representing increases of 41.4 percent and 26.5 percent, respectively, over 1984. Circumstances for developing a commodity economy in the countryside are gradually beginning to take shape and mature.

A look at widely reported circumstances shows that the following problems currently still exist in rural commodity production: The relations of supply and demand are insufficiently coordinated; in particular, demand is growing rather slowly, and this has led to overstocks of some agricultural and sideline products. Slow information, indiscriminate production, and low quality are prominent problems, and there are sectional contradictions of oversupply with respect to demand. Pre-production, production, and post-production services are weak. In some regions there is a fairly serious problem with the commercial sector forcing down grades or prices when procuring agricultural and sideline products. Commodity production is not developing as evenly as it should: in particular, it is developing quite slowly in the extensive, populous mountain regions. This should be a matter of great concern at all levels of leadership.

12510

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FEED SUPPLY, SALE PRICE PROBLEMS AFFECT PIG PRODUCTION

Beijing NONGMIN RIBAO in Chinese 3 Jun 86 p 2

[Unattributed article: "New Problems Appear in Current Pig Production: Feed Prices up, Pork Prices down, and In-Pen Numbers Drop"]

[Text] According to incomplete statistics from the nation's 12 provinces for the first quarter of this year in comparison with the same period for last year, in-pen pig births increased 5.8 percent, pigs leaving the pen increased 10.4 percent, and fertile sows increased 8.4 percent. Aside from the in-pen pigs and fertile sows dropping somewhat in Shandong and Anhui, there were increases in all other provinces. However, at the same time as the increases, some new problems have appeared that merit attention:

1. Feed Decreases and Feed Prices Increase Everywhere

Not a few places have been short of feed since last winter. It has been made known in Zhejiang Province's Jiaxing City that over the past several years 400 million kg in feed grain were stored annually in the city's farm villages, but only 300 million kg were stored last year. The area in spring grains for this year dropped more than 30,000 mu. Also, crops are growing poorly. Once more the trend is for a drop in production. At the same time, in the north food grains other than wheat or rice have fallen; transportation is difficult; the principal raw materials for the supplementary feeds of corn and beans are also insufficient; grain departments have stopped supply of negotiated price feeds; and, there is even insufficient grain for pig raising and quality has dropped. The 1985 dried melon output in Shandong Province's Xintai City in combination with last year's surplus comes to roughly 175 million kg and 135 million kg have already been consumed. There will be a shortfall of 60 million kg in feed before the new sweet potatoes come in.

At present, feed prices are rising everywhere. According to what is known from Jiangsu, Zhejiang, Shandong, Hunan, Anhui, Hebei, Chongqing, and other provinces and provincial cities, corn, wheat, and other unprocessed food grain and cake's lowest market value per kg compared to last year is between 0.08 and 0.10 yuan, the highest per kg is between 0.24 yuan and 0.25 yuan, and the average per kg is between 0.12 yuan and 0.18 yuan. In the most recent survey of market quotations from the province's eight counties and

cities undertaken by the Shandong Agricultural Survey Team: corn is 0.44 yuan a kg, a 37.5-percent increase over the same period last year; dried melon is 0.40 yuan a kg, a 66.6 percent increase; wheat bran is 0.34 yuan a kg, a 41.7-percent increase; and, cereal husk is 0.10 yuan a kg, a 42.9 percent increase. Supporting (mixed) feed increases have been even larger.

2. Circulation Channels Are Clogged, Pork Prices Drop

Due to the shortage of feed supplies, peasants are competing with one another in meat hogs in large quantities to minimize individual losses. The number of pigs slaughtered have greatly increased, and the commercial departments have reduced their purchase quantities due to full storage, making for a saturated market and dropping prices. According to the response from Liaoning, Jilin, and Heilongjiang Provinces, provincial, municipal, and county cold storage is currently completely filled, and there is no way that more meat can be purchased. The masses have pigs on their hands that are unsalable. The same is true for Zhejiang, Shandong, Jiangsu, and Hubei. Commercial departments have adopted limited purchases and sales by ticket. In some places the "pig ticket" line for June and July was in place by the end of March. The response of peasants everywhere is: "It's hard to sell pigs, it would be better to sell grain."

3. The Number of In-Pen Sows Is Dropping, in Some Places Sows Are Being Slaughtered

Anhui's Fuyang Prefecture currently has 30 to 40 percent fewer sows than last year. Jiangsu's Pei County sterilized or slaughtered 6,469 sows in one quarter for a 30.4 percent drop. Also, 25 litters, for a total of 234 head, were buried alive or drowned. Responses from some places, for instance the Sichuan cities and counties of Chongqing, Neijiang, Weiyuan, and so on indicate that the drop in in-pen pigs is due to the high cost of pig raising and the slow replenishment of pens by pig-raising households, and a contraction of the scale of pig raising. In the Chongqing City survey, there are now many peasant households reducing the number of hogs raised after the meat hogs are slaughtered. There are also a few places where replacement pigs are not being bought once the meat hogs are slaughtered, and some places with 20 percent of capacity standing empty. A similar phenomenon also exists in Zhejiang's Jiaxing.

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TRANSFORMATION OF WATER CONSERVANCY ADVOCATED

Beijing JINGJI RIBAO in Chinese 14 Jun 86 pp 1, 2

[Article by Zhang Qiu [1728 1471] "Manage Water Conservancy Well; a Brief Discussion of the Transformation of Water Conservancy"]

[Text] The fundamental task of water conservancy is to prevent disasters and to promote prosperity. It is an important aspect of socialism and one of the important indices of the progress of the development of agriculture and of socialist culture. Consolidating the results of water conservancy construction and further progress in water conservancy is essential to China's "four modernizations."

Thoroughly Transform Water Conservancy

In the 36 years since the founding of the country, the influence of "leftist" ideology in water conservancy, as in other areas, has caused setbacks and errors. Economic benefits were not so very good but the essential point is that great achievements were made in the area of construction. Especially since the 3d Plenum of the 12th CPC Central Committee, by thoroughly implementing the general policy on water conservancy work set forward by Premier Zhao Ziyang of "Strengthen administration and management, stress economic benefits," the economic results of water conservancy work have clearly risen. During the last 2 years, in order to adapt itself to needs arising from the reforms of the national economy, the Ministry of Water Conservancy has further stressed the "Give through service, thoroughly transform water conservancy" reform and stated that "we must concentrate on serving agriculture as our top priority, and expand our services to the national economy and to the development of socialism; from not devoting ourselves adequately to production we must put ourselves onto the track of raising economic results and move from considering just production to taking a wider view in our operations." Water conservancy has entered a new stage in which we will consolidate its foundations and further develop with the emphasis on intensive growth.

Contradictions and Problems

The following contradictions and problems exist in the construction of water conservancy in China:

The first is that the combined productive forces of the natural environment do not coincide with the distribution of water resources. In south China there is much water; in north China there is little water. More than 90 percent of China's cultivated land and forests are concentrated in the north-east and in the south while the west and the north are mostly grassland and wasteland. Industry is principally concentrated in the east and in the south; the value of industrial and of agricultural production in the west is very low.

The second is that droughts and floods are frequent, with floods in the south and droughts in the north. According to statistics between 1950 and 1979 more than 90 percent of China's disasters were caused by floods and drought. An average over many years of about 14 percent of China's cultivable land, or 400 million mu, suffers from drought each year. For almost 10 years none of China's great rivers has had a great flood which engulfed its entire basin and it is easy for people to become complacent in their thinking. Some departments are ignoring flood prevention safety; some people have proposed lowered antiflood standards for riverbeds. Vandalism has lowered the efficiency of water control and even created new problems. The flood last year in the northeast in Liaoning Province is a lesson. As far as drought and water shortages are concerned, since the 1970's drought and shortages of water in the north have already affected the development of agriculture and industry and directly affect the life of the people. The water shortage, along with serious waste of water, have made this problem quite acute. Inefficient agricultural irrigation systems and very low rate of industrial water recycling waste much water. Not only are water conservation measures inadequate but the broad masses have not yet understood the importance of conserving water. This, along with inadequate measures against water pollution, have made the contradiction between supply and demand in districts with water shortages even more acute.

The third problem is that the foundation of water conservancy facilities has not been consolidated. Lack of repairs and aging of water conservancy projects has lowered efficiency and made maintenance very difficult. According to statistics, more than two-thirds of the large reservoirs and three-quarters of the medium and small reservoirs throughout China have project-quality problems of differing degrees of severity. Only 80 percent of the installed electric pumping machinery for wells is in good condition. Of more than 100 million mu in irrigated areas, over 10,000 mu have not reached their planned potential. Most of this involves problems inherited from before 1977. In particular over the last few years, due to lack of repairs and the aging of water conservancy projects, the newly irrigated land created by new water conservancy projects has been less than the area lost by the loss of old projects. According to statistics between 1980 and 1984 China gained 52.71 million mu of newly irrigated land but during the same period lost 51.13 million mu. When we subtract the losses from the gains during this period China just managed to return to the irrigated area of 1978.

Plan Development According to Character.

In order to support the strategic goals for the economic construction of China for the end of the century defined by the Twelfth Congress of the CPC.

The future development of water conservancy should be considered in the light of what the national economy needs for its development. Considering the situation as a whole we should resolve the main contradictions and problems in order to consolidate the foundations of water conservation, develop further water conservation, ensure that measures are suited to local conditions, giving guidance according to the local situation in order to formulate long range and local development strategies appropriate to the development of the national economy as well as to adopt effective general and specific policies and measures.

1. We Should Place the Principal Stress on Specific Characteristics in the Construction of Water Conservancy Facilities.

We should make a comprehensive study of the situation and potential of the thousands of water conservation facilities that have been constructed and repaired since the founding of the country and conscientiously analyze the objective causes for the decline in the efficiency of water conservation projects in recent years. Insufficient investment is certainly the main reason but we should also consider deficiencies in our work. Some facilities have not worked to their full potential because of a combination of aging, lack of repairs, and vandalism. These facilities suffer from safety problems and missing parts; neglecting service to agriculture in recent years; and failure to perform maintenance, replacement of parts, and poor management. Thus, in the short term water conservancy construction should stress above all maintenance, repair, and replacement of missing parts, shifting the emphasis to improving the character of the water conservancy projects. We must shift our emphasis from using water resources to conserving water and seek progress, results, raise the utilization ratio of water resources and the productivity of water by focusing on the character of the water resources. As Premier Zhao Ziyang has said: "We should combine the water conservancy facilities already built with reforms in water consumption. If we manage water facilities well improvements in benefits is very likely; there is great potential."

2. The Stress on Water Conservancy Construction Projects Should Gradually Shift to Central China

The central leadership of the CPC has made these suggestions concerning the Seventh 5-Year Plan: the Chinese economy is divided naturally into eastern, central, and western regions. Development is gradually advancing from east to west. According to China's plan for stressing the development of these three economic regions, as water conservancy construction is consolidated and the foundation of water conservancy in the east is improved, the stress should shift toward the central region. Comparing the population, resources, output, and output value of the 10 provinces and regions of central China with the 11 provinces and municipalities along China's east coast, we find that central China is 80 percent larger than eastern China, the cultivated area is 90 percent greater although the population is just 10 percent greater, water resources are 40 percent greater, food production is just 30 percent greater, and the GVIAO is 30 percent less. We can see that central China has great economic potential, especially in agriculture. However the

central region's ability to supply water is just 67 percent of the eastern region's ability. Since the irrigated area in both regions is about equal the present water conservancy facilities of the central region do not meet its needs for economic development.

3. The Principal Direction of Attack on the Contradiction Between Supply and Demand for Water Resources Should Be Conserving Water

Premier Zhao Ziyang has repeatedly stressed: "China is so poor in water resources that both industry and agriculture should conserve water. This should become one of China's important economic strategies." The general policy for developing water resources in this century should rely on advanced science and technology, take conserving water as the main direction in solving the contradiction between water supply and demand. This is especially important where there are water shortages. We should realize that reducing expenditures is in a way developing resources. However, waste of water in industry and agriculture is very great today and so we must adjust the use of water in industry and agriculture. We should reformulate water plans and reassign water use and insert water-use planning into the production plans of industry and agriculture. If we do not make plans to furnish predetermined quantities of water and to formulate measures which reward and penalize consumers according to their water use, water conservation is just empty words.

4. Capital for Constructing Water Conservancy Projects Should Be Collected Through Many Channels; Water Conservancy in the Fields Should Depend Mainly on the Efforts of the Peasants Themselves

China is still a developing socialist country. China lacks the capital for construction; thus the spirit of relying on one's own means needs to be encouraged and put into practice. Improving our use and management of the capital we do have is particularly important. The present piecemeal system of scattering our capital every which way does not help use capital intensively and put money in circulation. Henceforth capital accumulation for water conservancy project construction will be done through multiple channels, multiple methods, and according to the size of the results. Capital accumulation and investment will be done together. People should not depend on the state to increase investment; localities should also increase investment and capital from each source should be combined. Results should be sought and the capital should be used where investment will be rewarded. The construction of water conservancy facilities in the field should depend on the accumulated labor and capital of the peasants themselves.

5. We Should Use Law and Economic Methods To Strengthen Integrated Planning and Management of Water Conservancy Projects

For a long period, China's Ministry of Water Conservation did not establish legislation nor did it have concrete specific policies, thus contradictions over vandalism of facilities, pollution of water supplies, and disputes over water conservancy and water use appeared one after another. We should quickly legislate and use legal and economic means to strengthen the integrated planning and management of water conservancy facilities. Especially when

developing, using, and preserving water resources we should perform integrated planning, management and protection by considering the basin, the river system, the weather, surface and underground resources, water quantity and quality, and the water course. We should take an overall view as we carry out the integrated assignment and adjustment of the water-use plans of various departments.

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CHINESE FIRST QUARTER AQUATIC PRODUCTS UP 23.3 PERCENT

Beijing ZHONGGUO SHANGYE BAO in Chinese 12 Jun 86 p 3

[Article by Li Jun [2621 6511]: "Chinese First Quarter Aquatic Production Up 23 Percent Over the Same Period Last Year; Progress in Aquatic Products Catch and Cultivation"]

[Text] Since the first quarter of 1986 overall aquatic products production climbed 23.3 percent over the same period of 1985. The spring and summer seasons of rapid growth have begun and the prospects for production are excellent.

The speed of aquatic products production growth and the simultaneous increases in fish caught at sea and in the cultivation of freshwater and saltwater fish are the most distinctive characteristics of this year's aquatic products production. According to statistics, overall 1986 aquatics products production had reached 1.16 million tons by the end of March, up 23.3 percent from the same period of 1985.

Rarely has the ocean catch increased as quickly in recent years as it did this year in climbing 25.3 percent to 597,000 tons. Aquatic products cultivated in seawater increased 19.6 percent to more than 70,000 tons while those bred in freshwater increased 21.5 percent to 500,000 tons.

The main reason for the increase in the sea catch is that black scraper was the principal species harvested during the winter fishing season. The proportion of black scraper caught between the end of December of last year and the end of March rose more than 20 percent over last year. In Zhejiang Province the black scraper catch rose 55 percent and in Shandong Province it climbed 74 percent.

The saltwater and freshwater pisciculture industries also grew very rapidly. Production units and individuals place a greater stress on products which will be welcomed by the masses and sell well. Production of mussels, which can satisfy the demand of the domestic market as well as be exported for foreign exchange, grew faster than any other saltwater aquaculture product. Laver production, in high demand, also rose rapidly. Freshwater aquaculture production rose in all provinces except for Liaoning and Jilin, where it declined slightly. Considering the overall Chinese situation, further increases in this year's freshwater pisciculture production may be hoped for, if no great natural disasters intervene, in the light of the large increases

in new fishponds dug last winter and spring and further improvements in the general level of pisciculture. Fairly large adjustments were made in the proportions of the species bred by increasing the production of high-quality species, such as grass carp, carp, and crucian carp, and by reducing production of species such as silver carp and variegated carp. In areas such as the Heping fish farm in Wuhan City, the proportion of superior species of fish stocked in the fishponds increased 2.5-fold and reached more than 30 percent of gross production. The production of superior species of fish in Jiangsu, Guangdong, and Hunan provinces also rose fairly rapidly.

The spring and summer fishing season began in the middle and end of March with catches mainly of stripers, large yellow croakers, little yellow croakers, and silvery pomfret, beginning in the East China Sea and the South China Sea, and spreading from there to the beginning of the high season which is already upon us. According to reports coming from many areas the catch during this spring and summer season will be about the same as last year.

The market has been very lively due to the increase in aquatic products production in the first quarter due to the increase in supply on the aquatic products market and rapid sales. According to incomplete statistics by the end of March 1986, aquatic products market transactions in the cities and townships increased 57 percent over the same period of 1985. Transactions increased 53 percent in village markets while sales in the state-run aquatic products marketing system climbed 18 percent.

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EXPLOITING CULTIVABLE SEASHORE FOR COASTAL AREA DEVELOPMENT

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL TECHNOLOGY] in Chinese No 3, Mar 86 pp 12-16

[Article by Xiao Peng [5135 7720], Ministry of Agriculture, Animal Husbandry, and Fishery: "Exploit Shallow Seas and Beaches; Promote Expansion of Industrial and Agricultural Trade"]

[Text] 1. Adequately Understanding the Significance and Role of Developing the Marine Aquatics Breeding Industry

The situation in 1985 in the rural and fishing areas throughout the country was good. Under the guidance of Central Committee Documents No 1 and No 5, the rural (fishing) areas entered the second stage of reform, readjusting the industrial structure, restructuring the purchasing and selling system, and planning production according to market demand, which brought new vigor to the economy of those areas.

For the past 5 years, gross output of aquatic products has increased an average of 7.6 percent per year. The increased output derived mainly from the aquatics breeding industry. Included in this is the rapid expansion of marine aquatics breeding; the area devoted to marine aquatics breeding in 1985 amounted to 4.4 million mu, which was more than double that of 1980. There has been a change in the aquatics breeding variety mix as well; the proportion of fish, shrimp, and seafood delicacies has increased from 1.7 percent to 9.3 percent, with an especially large expansion in prawn breeding. Many farming and fishing households which have become rich through expanding marine aquatics breeding and production have sprung up throughout the country from north to south. In a number of localities, fishing played an active role in supplementing agriculture and promoting industry; this was an important aspect of readjusting the industrial structure and accelerating the development of the aquatics industry in farming (fishing) villages along the seacoast.

Conditions are good in the PRC for expanding production from marine aquatics breeding, and the potential is great. There are large tracts of unexploited water, beaches, and shoals along the seacoast in the various localities; a water area of more than 20 million mu is utilized nationwide for aquatics, while another 16 million mu which could be utilized is not being adequately exploited. In the wake of S&T advances and a strengthened economy, beaches and shallow seas could be used to steadily expand aquatics breeding.

Making ample use of the vast natural resources along the coasts to expand the aquatics breeding industry does not require cultivable land, yet brings a higher economic return. The output value of 1 mu of prawns, reckoned at the common figure of 150 jin per mu and at 6 yuan per jin, would bring 900 yuan, and after deducting costs, would leave a net profit of 400 to 500 yuan. The income from breeding other shellfish and aquatic plants likewise is much greater than from farming. According to 1984 statistics, the nationwide average take of kelp from the sea was 1,265 kg per mu, with an output value of approximately 1,000 yuan; 4,878 kg of mussels per mu, valued at 600 to 800 yuan; and 140 kg of laver per mu, 600 to 700 yuan. One mu of scallops grown for more than 1 year would produce 3,000 kg of shellfish products, valued at 5,000 yuan; the per-mu output value of razor clams, hua [5363] clams, and oysters also is in the 500 to 600 yuan range. Income from breeding such well-known and much sought after fish as the grouper and red porgy is even more impressive. The masses in Guangdong say that raising two groupers is equivalent to raising a hog; growing them in net traps can bring a yearly net income of HK\$5,000. It is apparent then that developing these undertakings is an important route to leading the coastal fishermen to prosperity.

People refer to marine aquatic products as "seafood," most of which is delicious, highly nutritious, and very much welcomed by the masses of domestic consumers. In the wake of the rise in the standard of living, and after solving the problem of feeding and clothing the people in the urban and rural areas, there has been a demand for better food and clothing. Although there has been an increase in aquatic products the past few years, the demand is still far from being met. Prawns are principally for export, and are hardly ever found on the domestic market; it would be difficult to purchase them even if one had the money. Some of the other marine aquatic products are also rarely seen on the market, due to limited quantities and assortment, and low quality. Some high-class tourist hotels and restaurants in the large and mid-sized cities still must import fine-quality aquatic products, such as dried scallops, abalone, sea slugs, and others. All these situations can, and should, be resolved by our relying on ourselves to expand production. Through observing foreign markets we know that many of the marine aquatic products are export goods in great demand, and a source of exchange; prawns, crabs, laver, and shellfish bring a high price on these markets. Exporting 1 ton of the finished product made from prawns bred to high standards will bring \$10,000 in foreign exchange, which is equivalent to the amount of exchange obtained from exporting 83 tons of corn; 1 ton of average quality prawn products will sell for approximately \$7,000. The selling price of purple mussels, which is low domestically, is considerable on the foreign market.

Expanded production is the key to meeting the domestic and foreign market demand. There are 14 open port cities and 4 SEZ's along China's seacoast, and we must make adequate use of this favorable condition, produce more well-known, special, fine-quality products, develop the industrial, agricultural, and trade economy along the coast, use exports to finance, spur on the hinterland, and promote the development of the whole aquatics industry.

In terms of aquatic products themselves, expanding marine aquatics breeding is an important aspect of increasing the output of such products perhaps many fold. The Central Committee has called for a quadrupling of aquatic product output by the end of the century, and a more than quadrupling of output value; to realize this target, marine breeding must shoulder the burden, especially the output value aspect. In expanding marine breeding, not only can we see to it that the surplus labor in the seacoast districts is given jobs, at the same time we can entice some of the specialized fishermen to leave their boats and take up aquatics breeding. The output value from marine breeding exceeded that of ocean fishing in 11 coastal counties in 1984. This developmental trend aids the rational readjusting of the fishery production structure, reduces the intensity of fishing in the vicinity of the ocean, protects and multiplies resources, and is highly significant in terms of promoting the expansion of the whole aquatic products industry.

II. Fundamental Experiences in Developing Marine Breeding

To summarize, there were four fundamental experiences which enabled us to realize large increases in marine breeding during the period of the Sixth 5-Year Plan:

A. The Power of Relying on Policy: The expanding of shrimp raising is a convincing example; the power of relying on policy is an important reason why, within a short period of 6 years, we now have shrimp where we had none before, and quickly have become a world leader in shrimp raising. We established the China Aquatic Products Breeding Corp. in 1979, organized technical tasks, and employed joint management methods to return export profits to the breeding and production units, which greatly motivated the various districts, sectors, and production units to expand the breeding industry. We entered the second stage of reform in the agricultural (fishing) villages in 1985, eliminated centralized and assigned procurement of aquatic products, and freed prices, which made the masses even more enthusiastic about breeding aquatics. Leting County raised funds in 1985 (one-third each from foreign funds transferred domestically, pooling peasant resources, and bank loans), increased construction of prawn ponds, and in one leap became one of the most advanced counties nationwide. To expand shrimp production in the Hanting district they "did not look to the higher authorities"; they made use of water conservancy practices, brought compensation where there was none before, and relied mainly on the method of allowing labor to buy shares; in the winter of 1984 and spring of 1985, they raised funds totaling more than 6 million yuan, took out 3.7 million yuan in loans, constructed 43 11 of surrounding dikes, and income from the shrimp raised in the resulting ponds amounted to 3.87 million yuan.

After the 3d Plenum of the 11th CPC Central Committee, marine breeding gradually came under the production responsibility system, and to date contracting for production responsibility generally has been with households and production groups; there are more than 200,000 marine breeding specialized households and jointly run enterprises nationwide. In addition, the various localities in recent years have formulated policies to encourage all sectors

and industries to invest in developing unexploited beaches and waters, to obtain certificates establishing use rights, to refrain from levying taxes for several years on newly developed beaches, shoals, and water areas, and to assign loan funds and materials on a priority basis. They have devoted major efforts to motivating the masses to develop the unexploited beaches and waters. The area devoted to marine breeding in Zhejiang Province increased from 185,000 mu to 380,000 mu over the past 2 years; output nearly doubled from 48,000 tons in 1982 to 90,000 tons. In all areas over the past few years where the policies were correctly implemented, the masses' motivation to produce more was increased and production rose rapidly; in areas where the policies did not take hold, large tracts of unexploited beaches and water remain. This experience is worth summing up well.

B. Relying on S&T Advances: The PRC currently has embarked on breeding and raising large quantities of more than 20 marine product varieties, including fish, shrimp, shellfish, aquatic plants, crabs, and sea slugs. In developing these varieties, breakthroughs in scientific research, advances in S&T, and the mastering of this S&T by the producers have a direct bearing on improvements in the main production links, such as nurturing the young and growing them to maturity, and processing to preserve freshness. Kelp cultivation on rafts, and artificially breeding fry and transferring them to the south in the 1950's, artificially breeding seedlings and nurturing layer in the 1960's, and raising mussels and sea slugs in the 1970's all promoted greatly expanded production. In the 1980's, there has been continued mass production of the young of shrimp and mullet, and breakthroughs have been achieved. This, together with artificial breeding techniques for many varieties of fish, shrimp, crabs, sea slugs, and including scallops introduced from the gulf and oysters from the Pacific Ocean, all are the result of integrating scientific research with production. To date, 35 marine aquatics breeding scientific and technical projects have been commended, of which 13 received awards by the general session of the National Science Conference in 1978, 22 received awards from 1978 to 1985, and the techniques for mass producing the young of prawns entirely by artificial means captured the State First-Class Award for Advances in Science and Technology.

The exploitation of each variety, as well as the increase in output and improved quality, all depended on technical breakthroughs. Breakthroughs in mass producing the young of prawns were a result of the close integration of scientific research with production, and carrying out cooperative S&T projects on a large scale. Not only was the nationwide demand for fry for raising shrimp met in 1985, we released young shrimp of 3 cm and longer for increasing breeding in the harbors and bays as well.

The solution of key technical research problems in recent years for breeding and production of aquatics has directly promoted increased unit yields, made for more intensive and extensive production, and resulted in the appearance of a group of high-yielding marine aquatics breeding types which bring high returns. Through refined techniques for bringing high yields of prawns, each of the provinces now has types which produce through breeding 300 to 400 jin per mu. In 1984, the Zhoushan Aquatics Institute, in a 5.6-mu pond in Putuo County, achieved a per mu yield of 1,330 jin; in 1985, the Nandagang

[0589 1129 3263] farm in Hebei Province, in a 5-mu pond, achieved a per mu yield of 1,290 jin; a 4.8 mu shrimp pond in Lianyungang City realized a per mu yield of 1,343.8 jin, which set a new national record. Shrimp raising in Jiangsu Province's Ganyu County yielded an average of 173.5 jin per mu, and in Hebei Province's Huanghua County yielded an average of 160.8 jin; both of these set new national unit output levels for shrimp raising over a large area. The per-mu yield from shrimp raising nationwide rose from 21.7 jin in 1979 to 80 jin; included in this is a rise in the jointly managed base counties from 34 jin to 98 jin. Although the average level is not yet very high, progress has been quite rapid. Through marine breeding of nullo luofeiyu [1441 5012 5012 7236 7625], Jiaonan County in Shandong obtained 1,500 jin per mu over a small area; Wendeng and Rongcheng Counties achieved 800 to 1,000 jin per mu over a large area. Raising fish and shrimp together in Qidong County [Jiangsu Province] resulted in a yield of more than 700 jin per mu, and both the fish and the shrimp did well. Per-mu yields of several tens of thousands of jin were realized from breeding groupers in the sea in net traps in places such as Zhuhai and Huiyang Counties and cities in Guangdong Province; the same high yields were achieved by the Dalian City Aquatics Institute in raising rainbow trout and silver salmon in the sea in net traps. Dalian utilized the chambers for growing the young of prawn and marine delicacies to raise luofeiyu, and obtained a yield of 15 jin per cubic meter of water (more than 18,000 jin per mu). Penglai County in Shandong Province has spread the intercropping of shellfish and aquatic plants over a large area; Changdao County has implemented trials dealing with the three-dimensional use of a body of water, raising kelp on the surface layer, mussels and scallops in the middle layers, and increasing the reproduction of sea slugs, abalone, giant algae, and sea urchins on the ocean floor; this testing was done to develop new avenues for increasing the economic return from marine aquatics breeding.

The breeding of aquatic plants has been consolidated and expanded as a result of advances in processing technology. Through improved technology the quality of iodine, gum, and alcohol made from kelp is better; the production of packets of brown algae, and "convenience foods" and "health foods" utilizing kelp as raw materials has been given a boost, which has maintained kelp output at record levels in recent years. There have been more and more other products processed from aquatic plants as well; finished products such as packets of salted clarified seaweed from Dalian, and laver from Qidong, Pujiang, Lianjiang, and Pingtan are exported to Japan, Hongkong and areas of Southeast Asia. The agar and qiala [0595 2139] gum produced from Jiangli (?) [3068 4539] and kylin in Hainandao is in great demand at home and abroad, which gives impetus to greatly expanded artificial breeding of these source materials.

The S&T level determines breeding and production standards. All areas which pay attention to S&T work achieve breakthroughs and expansion in breeding and production; all areas which do not take S&T work seriously lag behind in breeding and production, and there will be no improvement. This problem should arouse sufficient attention on our part.

C. Paying Attention To Establishing Commercial Bases; Doing a Good Job of Providing Marine Aquatic Services Before and After Production: Constructing commercial bases for marine aquatics breeding was an important project during the Sixth 5-Year Plan. Commercial bases for seafood delicacies, marine fish, and sand and shallow-water shellfish have been set up over the past 5 years. Establishing commercial bases not only has opened up the strengths of the various regions in terms of natural resources, and provided certain products to the large cities and for export, it has provided fry, feed, and technical services to the masses for aquatics breeding as well; in providing demonstrations and guidance, it has promoted the development of marine aquatics breeding along the lines of improved, high-output production, and the immediate results, as well as the social results, have been noteworthy. Aquatics departments at all levels and aquatics breeding corporations in recent years have provided many services before and after production which are related to breeding and production. They have provided services to the producers dealing with such aspects of aquatics breeding as site selection, planning, layout and distribution, supplying fry and feed, product processing and marketing, providing information and consulting services, and organizing technology exchange. They have set up an integrated supply and marketing system encompassing the production, purchasing, processing, and exporting of prawns, which has played an important role in guaranteeing production and raising product standards and quality. Since Shandong's Rushan County established on its own the Aquatics Breeding Corp. and the Technical Services Corp. for breeding aquatics on beaches and shoals, they have provided the young of shellfish and shrimp to the aquatics breeding specialized households and supplied compound feeds, so that now two-thirds of the feed county-wide used for raising shrimp is compound feed; as a result, the production and growth of prawns has gone well, and the economic results have been outstanding. The technicians of the service corporation also have gone to the various localities and implemented technology contracting, technical services, and technical consulting, and have been successful with various purchasing and marketing projects; they have been warmly received by the aquatics breeding households, and have been praised by the masses for the "fine logistics" and "fine advice" they have provided.

D. Gaining the Serious Attention of Leaders; Enhancing Mobilization and Organization for Marine Breeding; Helping To Solve Practical Problems: The serious attention of party and government leaders at all levels is the key to promoting various undertakings. Many cities and counties along the sea-coast set up leading teams or headquarters for exploiting the beaches and shallow waters, with participation by the principal competent officials, drew up comprehensive programs, studied and implemented specific policies and measures, and enhanced organization and guidance with respect to exploiting the beaches and shoals. Donggou County experienced 30,000 to 40,000 mu increases in area devoted to raising prawns in each of 1984 and 1985. This amounts to one county equaling a province or several provinces with respect to expanded area, principally as a result of leadership, mobilization, and organization by the Donggou County party and government, and through the concerted efforts and industrious spirit of the various concerned sectors and scientific research units in the county dealing with aquatics.

The leaders in many localities still pay attention to drawing on the strengths of a given locality, and formulate policies for expanding aquatics by suiting measures to local conditions. Changdao County is an island county, and as such has traditionally emphasized aquatic products; the county leaders have devoted major efforts to developing "marine agricultural and livestock farms." In recent years, especially, they have emphasized the breeding and production of marine delicacies, and have witnessed great achievements. In that county at the present time, 51 percent of the output value is derived from aquatics breeding, while fishing accounts for 49 percent. Zhangpu County in Fujian Province has studied widely Shan Hai Zhing, has drawn on what the sea has to offer, and has launched the breeding of various varieties of aquatics, such as oysters, marine fishes, and seafood delicacies; it has done a great deal of work aimed at helping the ocean farmers and fishermen along the coast get rich. A good many provincial, prefectural, county, and city governments, as well as concerned sectors, have actively supported marine aquatics breeding through funds, credit, and materials, and have been forceful in promoting expanded production.

III. Marine Aquatics Breeding Must Undergo Greater Expansion

Marine aquatics breeding and production holds great potential, there are many varieties, and the output value and rate of return are high; these are points which need to be emphasized in developing the aquatics industry. There should be an even greater expansion during the period of the Seventh 5-Year Plan. Nationwide marine aquatics breeding targets of the Seventh 5-Year Plan are: gross output totaling 1.2 million tons by 1990, and an annual rate of increase rising to 11.4 percent, up from the 9.4 percent of the preceding 5 years; an average yearly increase in quantity rising to 100,000 tons, up from the 50,000 tons of the preceding 5 years. Gross output value should more than double. The plan calls for the quantity of exports and the resulting exchange by 1990 to be about double the 1985 aquatic products export totals.

In order to realize the program targets of the Seventh 5-Year Plan, and to promote the expansion of the marine aquatics breeding industry, we must pay special attention to the following agenda:

A. Correct Guiding Thought, Clearly Define Points of Emphasis; Surmount Weak Links; Accelerate Development and Use of the Shallow Sea and Beaches: We must pay attention to developing and utilizing unexploited beaches and waters, just as we pay attention to cultivated land, and come up with a strategic plan which would speed up development of the aquatics breeding industry, and which would continue to regulate the farming (fishing) village industry along the coast. From now on, in assessing the true achievements of coastal fishing production, we must examine the development and use of the shallow sea and beaches. In expanding the marine breeding industry, we must continue to implement the production policy of "full utilization of the shallow sea and beaches, reproduction and raising of aquatics by suiting measures to local conditions, all-round development of fish, shrimp, shellfish, and aquatic plants, and comprehensive management of processing, transport, and marketing." During the period of the Seventh 5-Year Plan, we must continue to implement various policies which are effective in expanding marine breeding and

production; at the same time, based on new circumstances, we must adapt to the requirements of second-stage rural reform, and research and formulate new policies to accelerate expansion of marine breeding and production.

The policies must start by promoting production, motivating the producers, protecting the legitimate rights and interests of the producers and investors, and correctly handling relationships between the state, collective, and individual. In carrying out present policies, we must further perfect them and make them all-encompassing, to realize their full benefit. Focal points for research are:

1. Continuing to obtain use rights to beaches and water areas, researching and settling problems in determining authority and issuing permits, and mobilizing the various parties to develop the unexploited beaches and waters. Each locality should pay close attention to successfully carrying out the work of determining rights and issuing permits, requiring that such work be totally completed as quickly as possible for the beaches, and setting about determining rights and issuing permits for developing shallow sea aquatics breeding areas.

2. Further perfecting various forms of the system of contracting for joint production, insisting on state management, the collective, and the individual progressing in unison, and encouraging and supporting jointly run entities, specialized households, and individual households to expand the aquatics breeding industry; developing socialized services, especially in districts where production is concentrated, and according to the needs of the producers, and doing a good job of organizing services related to fry, feed, technology, processing, transport, and sales, as well as to credit and materials. We must continuously perfect the cooperative fishing economy and promote expanded commercial production.

3. Expanding channels for the masses to obtain funds, promoting integrated complexes in various forms, attracting foreign capital, and encouraging the concerted development of particular localities, and other parts of the country, within and outside given provinces. Contracts for joint operations and management must receive legal protection, and no sector or unit may take off and act as it pleases; we must conscientiously implement policies which define who invests funds (or labor), who carries on the operations, and who gets the returns.

4. Correctly handling the relationship between distribution of earnings and accumulation, and giving consideration to the interests of the state, the collective, and the individual. Comrade [Hu] Yaobang recently instructed us: "For the most part it has been less than 2 years since the coastal fishing industry has been given a boost. The work of the fishermen is somewhat more arduous than that of the farmers, so the income should be a little more. As such, we must not change our orientation of enlivening [the fishing industry]; it will not do to become infuriated. When the process of becoming prosperous is relatively advanced, it seems we could begin to expand somewhat the amount we set aside for public welfare causes and increase taxes a little." We must conscientiously carry out the spirit of these instructions

of [Hu] Yaobang, and correctly handle this relationship. In making distributions to the producers, at the same time as encouraging labor and bringing prosperity, we must pay attention to guiding them to expand reproduction, to improve production conditions, to increase production and accumulation, to maintain stamina for expanding production, and to enhance aquatics breeding safety.

5. Strengthening management of the products and markets in connection with the new circumstances and new problems which appeared in 1985, after aquatics products prices were set free, and formulating policies which take into account the interests of the producers and consumers, and which aid in expanding exports and creating more foreign exchange. In order to make guiding production easier, to link up production and marketing, and to protect the rational interests of all parties, we must study how to implement a system of contracting for purchases of marine breeding products. Joint agreements which have been signed heretofore for breeding prawns and which have proven unsuitable must be revised and supplemented. We must study and resolve problems in prawn raising pertaining to the export management system, prices, and subsidies for export losses.

B. Enhance S&T Management; Organize S&T Projects; Popularize and Apply the Results and Experiences of Domestic and Foreign Advanced Science and Technology: Persist in science and technology serving production, and a scientific research orientation where research and production are closely integrated. There is a question of proprietary rights of research results; the principal relationship among the sectors which list projects and tasks, which appraise and compare results, and which conduct research should be one of mutual cooperation and mutual support, and must not be simply a monetary relationship.

We feel that the key tasks requiring research and production breakthroughs during the period of the Seventh 5-Year Plan are: 1) Effecting a breakthrough in fry breeding techniques for such marine fishes as mullet, grouper, porgy, yellow croaker, and lefteye flounder, as well as breeding and reproducing such major varieties as juyuanqing [6920 4878 7230] crabs, swimming crabs, abalone, sea slugs, and blood clams, achieving large-batch productivity in fry breeding, and coming up with techniques for increased breeding of the mature animals. 2) Making significant progress in scientific methods of mixing compound feeds, and in feed-processing techniques, for prawns and marine fishes. 3) Summarizing and popularizing the pattern for high output in prawn and marine fish breeding. 4) Making productive breakthroughs in the artificial breeding of striped prawns in the south, and bringing about the maturation of the sex glands of the parent shrimp and hastening the arrival of young to within 1 or 2 years. 5) Continuing to do a good job of introducing, digesting, and absorbing new marine breeding varieties, and improving techniques for increased production of scallops in the seas and bays, and of oysters in the Pacific Ocean. 6) Comprehensively utilizing processing techniques for shellfish and aquatic plants, and manufacturing machinery for gathering, processing, and packaging. 7) Researching the prevention and control of diseases in the main varieties of fish, shrimp, shellfish, and aquatic plants raised. 8) Expanding and circulating reproduction techniques for fish, shrimp, crabs, and marine delicacies.

Marine breeding technical services and the popularization system must be set up first at the provincial level. We must encourage transprovincial and transregional technical contracting and technical services, and effect cooperation between north and south, and mutual aid and exchange. We must enhance technical training for specialized groups and specialized households, continue to institute separate training classes for each level, respectively, and utilize up-to-date science and technology to guide production.

C. Pay Attention To Constructing Complete Systems for Fry Stock, Feeds, and Water, and To Establishing Processing Facilities; Effect Synchronous and Coordinated Expansion of Breeding and Production: Water, stock, and feed are three major factors influencing breeding for high output and superior quality; complete processing units also guarantee bumper output and harvests, and high return from aquatics breeding. We should assimilate the experiences and training of the past several years, pay special attention to the importance of setting up complete units, and rigorously implement what is required by science to guarantee breeding and production.

Simultaneous with formulating development programs for the various localities, we must consider distribution and scale when constructing complete units. In terms of the development program of the Seventh 5-Year Plan, there still is a great shortage of fry stock; we are far from being able to fill the demand for increased breeding of shrimp fry in the south, and for fry production of other types such as seafood delicacies, fish, and beach shellfish, so we must emphasize expansion. In addition, we must emphasize as key projects construction of feed factories, and construction of resource bases for feeds which go into compound feeds; given improved scientific prescription standards and processing techniques, we must effect integration of large, mid-sized, and small enterprises with emphasis on rational distribution of the medium- and small-scale enterprises. We must promote the opening up of feed sources for the aquatics breeding farms and integrated complexes, and build mixed feed shops. In fish and shrimp raising, growth will be rapid only when the water quality is good; to improve the feed conversion ratio we must enhance construction of complete water systems, and bring about breeding in flowing water and deep water. Processing capacity must be adapted to production, and in addition to freezing fish, shrimp, and scallops, we must successfully engage in various types of chemical processing to enhance the variety and color of commercial products.

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EXPERTS SAY HUANG HE WILL NOT CHANGE COURSE

OW161228 Beijing XINHUA in English 1105 GMT 16 Sep 86

[Text] Zhengzhou, September 16 (XINHUA)--Chinese experts have confidently predicted that the Yellow River will not change its course in the next century as it repeatedly did in history.

In making the prediction, they based themselves on China's success in harnessing the river through 40 years' work to raise and strengthen the dykes on the lower reaches while building flood-prevention projects on its upper and middle reaches.

In addition, people have found ways of controlling soil erosion on the river's upper reaches through planting trees and grass, according to officials at the Zhengzhou-based Yellow River water conservation committee.

Known as "China's sorrow," the river changed its course 26 times in the 2,400 years leading up to the end of this century. And in a 70 year-period prior to 1946, it breached its dikes 50 times, causing untold sufferings to millions of people.

The river, running 5,464 kilometers across Northern China, carries 1.5 billion tons of silt downstream every year, raising the river bed of some sections meters above the land level beyond the dikes.

Over the past 40 years, however, peasants in Henan and Shandong Provinces have raised the 1,400-km dikes in the lower section of the river by two to six meters.

The 174 hydroelectric power stations built so far along the river store 31.5 billion cubic meters of water--60 percent of the river's annual flow.

Two flood retarding basins in Henan and Shandong Provinces, on the lower reaches of the river, are capable of storing five billion cubic meters of water and are used to help retain a rare flow of 22,000 cubic meters per second.

Moreover, soil erosion on 70,000 sq km of land on the loess highlands has been brought under control since 1979. Peasants there are being encouraged to terrace the fields and plant grass and trees to prevent soil from being washed away into the river.

The dike raising and reinforcing program will continue, the committee officials said. Meanwhile, more reservoirs will be built on the upper reaches of the river for flood diversion and irrigation.

The water channels near the mouth of the river will be dredged to facilitate the flow of water into the sea, they added.

Some foreign water conservation experts have said a change in the course of the Yellow River will be inevitable, and even advised that work begin on dredging a new course for the river.

While insisting that the river would be safe in about 100 years from now, Chinese experts are of the opinion that the proposal from their foreign counterparts is not feasible.

Dredging a new course for the river would destroy the present irrigation, drainage and transport system on 300,000 sq km of land on the lower reaches of the river and involve moving at least 2.5 million people, said the officials at the committee.

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INVESTMENT INCREASES, PRODUCTION CHANGES NOTED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 5, 5 May 86 p 33

[Article provided by the Ministry of Agriculture, Animal Husbandry, and Fishery's Agriculture Bureau Information Office: "Increase Agricultural Investment, Improve Production Conditions"]

[Text] I. Shaanxi

It has been resolved to increase agricultural investment by 100 million yuan from 1986 through 1988, restoring it to its maximum historic level. In those years the province, prefectures, and counties will draw an additional 10 percent from financial resources for use in agriculture. The province will set aside the following: 1 million yuan to restore the system of scientific and technical agricultural services, 2 million yuan and 500 tons of gasoline to control blight and pest damages in wheat fields, 40 million yuan for fertilizer price decreases and tax exemptions, and 14 million yuan to aid production development in poor mountain regions. Shaanxi's poor mountain regions will be exempted from 10 million yuan worth of agricultural taxes and will receive 5 million yuan in funds to aid production development. Ten million yuan drawn from civil administration funds will be pooled to develop production in 20 impoverished mountain counties. Of the 20 million yuan raised in Shaanxi's mountain regions, 4 million yuan will be set aside from provincial coffers to aid poor mountain regions.

II. Guizhou

In 1986 the various funds used for agriculture throughout Guizhou have risen 100 million yuan. Of this, budgeted outlay is up 60 million yuan, new increases in development funds for impoverished regions total 20 million yuan, and small fertilizer subsidies are up 20 million yuan.

III. Jiangsu

Building and rural construction funding institutions are making further improvements in farm production conditions. Fund sources have been tentatively decided as follows: ten percent of after-tax profits from township enterprises; a tax on enterprise capital retained in villages; 50

percent of the rurally retained income taxes on individual village households; and funds returned by the state out of increases in industrial, commercial, and income taxes on township enterprises. Investment in capital construction on farmland has been restored to 1980 levels--from 19 percent in 1985 it has now been restored to 25 percent.

IV. Yunnan

Agricultural investment has reached 20 percent of capital construction investment, and operating expenses in the agricultural sector have been restored to 1984 levels. During the Seventh Five-year Plan 15 million yuan per year will be drawn out in Yunnan for funds to disseminate agricultural science and technology. Of this, 10 percent per year of funds for technological reform in Yunnan will be used to transform agricultural technology. One-third of the three expenses for science and technology in Yunnan will be used for agriculture. Fifty percent of the 60 million yuan earmarked to assist undeveloped regions will be set aside for agriculture and for farm sideline processing industries. Beginning in 1986 a portion of slaughter taxes and industrial and commercial taxes will be withdrawn and used to develop agriculture.

V. Hubei

Beginning in 1986, according to state stipulations a portion of increases in township enterprise income taxes and industrial and commercial taxes levied by the state will be used to aid agriculture. During the Seventh Five-year Plan over 30 percent of total provincial investment in construction will be set aside for capital construction on farmland.

VI. Beijing

The 82.2 million yuan of farm aid in 1986 (after deducting operating costs) represents a 13.8 percent increase over 1985.

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CSO: 4007/419

RAPSEED HARVEST OUTLOOK TERMED 'PLEASING'

Beijing NONGMIN RIBAO in Chinese 12 May 86 p 1

[Article with individual provincial reports by Yin Bangliang [1438 6721 5328] (Sichuan), Lu Xinyun [7626 1800 7189] (Henan), Li Dongchu [2621 2639 0443] (Jiangxi), Chu Dayi [5969 1129 4135] and Liu Jainguo [0491 1696 0949] (Zhejiang), and Yin Dawen [0603 1129 2429] (Guizhou): "Rich Rapeseed Harvest in Sight, Timely Organization of Purchase Needed"]

[Text] Editor's note: We joyfully see from this group report that rapeseed crop progress for most of China's rapeseed production districts is pleasing, and a rich harvest is in sight. According to agricultural department predictions, and despite losses in production from disasters already being inevitable for some districts, this year's national summer rapeseed total production volume will increase over last year due to a more than 5 million mu increase in acreage, stepped up field management, and a rise in unit production. Currently, the rape harvest is in progress. It is hoped that rape purchasing departments are energetically making preparations, promptly organizing for purchasing, putting transport channels into order, and are not letting the peasants worry about the appearance of "selling oil is difficult." [End Editor's note]

Sichuan Will Have a One-Tenth Production Increase over Last Year

The way the rape seed crop is growing in the various areas of Sichuan Province is pleasing, and a rich harvest is in sight. Some Chuan-nan districts are already in the middle of harvesting. A total of 13.12 million mu in rape was cultivated this year in Sichuan Province, a 670,000-mu expansion in cultivation over last year. This is the most rape ever cultivated in a single year. Total production may reach 10.85 billion kg, a more than 10-percent increase over last year.

Henan Yields Set a New Record

Henan Province's reform of the rapeseed purchasing system has mobilized peasant enthusiasm for rape cultivation. This year's rapeseed harvest is unprecedented. It is predicted that yields will reach 275,000 tons, 50,000 tons more than the record yield in 1982. There was serious drought last winter and spring. Peasants paid attention to fertilizer application,

managed painstakingly, and the harvest area reached 3.9 million mu. It is predicted that unit and total rapeseed production will surpass highest levels in history.

Jiangsi Might Surpass the Highest Levels in History

An area of 4.71 million mu in rapeseed was planted this year in Jiangsi Province. It is predicted that 165,000 tons of rapeseed might be harvested, a 7.8-percent increase over the 153,000 tons in 1985 and a 3.1-percent increase over the past highest yield of 160,000 tons in 1982. Though large areas across the whole province suffered wind and hail damage from 10 to 20 March, because of the way the crop is growing and the 500,000 mu increase in area over last year, a production yield for this year is within sight that will surpass past highest levels.

Zhejiang Production Will Shrink 70,000 Tons over Last Year Because of Disaster

The area of rapeseed cultivation this year in Zhejiang is 4,249,000 mu, a 143,000-mu increase over 1985. Because of the seriousness of the damage, it is predicted that rapeseed yields for this year will be 356,000 tons, a 70,000-ton reduction over last year. Clouds, rain, and low temperatures were experienced last winter and spring just when the rape was at the seedling stage, and there was a lot of downy mildew, sclerotium disease, and other damage. There was especially severe torrential rain and hail last month on the 9th and 10th in Ningpo, Jiaxing, Hangzhou and elsewhere. The damaged rape area was 70,000 mu, and a 73 million-jin reduction in production is predicted. Seedling conditions are bad in Zhejiang, approximately 20 to 30 percent are third-rate seedlings. Currently, peasants are everywhere in the middle of strengthening management to prevent the spread of disease and insect damage.

Guizhou Has Second Highest Year in History

This year Guizhou will have the second highest rapeseed production year since the Guizhou historical high in 1982 (a total yield of 460 million kg). Total yield will reach 375 million kg, an increase of more than 110 million kg, or 39.5 percent, in production over last year. At present, peasants in all localities are energetically preparing for the harvest. There was successive drought in many areas of Guizhou last winter and spring. A series of measures was adopted in Guizhou to bring in this summer's rich crop harvest: (1) The provincial government ruled that wide open purchases be implemented for rapeseed. (2) The area was expanded. The province's rape harvest area is 5 million mu, a real harvest area of more than 250,000 mu greater than last year. (3) Seed quality in all localities was everywhere better than last year, and field management was promptly strengthened and a good foundation set for a rich rapeseed harvest.

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TRANSPROVINCIAL AFFAIRS

BRIEFS

CONFERENCE URGES FARMER AID--Lanzhou, September 3 (XINHUA)--Participants at a conference on farming in the dry areas of North China have advised the central government to subsidize fertilizer sales and train the region's farmers in modern technology. According to conference proceedings made public today, other recommendations made by the 130 scientists at the meeting included:

- boosting grain production in dry areas to make them self-sufficient;
- encouraging grass growing for raising animals on land unsuitable for grain;
- communicating the latest agricultural research findings and information about new technology to farmers as rapidly as possible. Scientists at the meeting said they expected droughts in the dry areas of north China to worsen and water sources to become increasingly scarce. [Text] [Beijing XINHUA in English 1206 GMT 3 Sep 86] /8309

CSO: 4020/1

BEIJING

BRIEFS

MAYOR ON BOOSTING FOOD INDUSTRY--Beijing, September 15 (XINHUA)--Conditions for foreign investment in the capital's foodstuff industry will remain good, with tax breaks and future demand for foreign imports continuing, said Mayor Chen Xitong today. The city council values the industry highly, listing foodstuffs as one of the economy's industrial pillars, together with electronics, automobiles and building materials, said Chen at the opening of an exhibition for the local food industry. Over the past five years the city invested more than 800 million yuan (216 million U.S. dollars) in the industry for technical renovations and new plant construction, and bought 190 single machines and complete sets of equipment worth 130 million U.S. dollars from abroad. Total investment was more than three times the total for the previous 30 years. Output value of the industry increased at an annual rate of nine percent since 1981 to reach 2.42 billion yuan (654 million U.S. dollars) last year, but still fails to meet the needs of 10 million residents: one million transients each day and one million foreign tourists annually. Displayed at the exhibition are 5,000 varieties of food, mostly famous brands and fine quality products, including a wine fermented from osmanthus flowers which won gold medals at world competitions, and newly-developed, low-tar cigarettes. [Text] [Beijing XINHUA in English 1552 GMT 15 Sep 86] /8309

CSO: 4020/1

BRIEFS

SCIENCE TRAINING UPGRADES OUTPUT—Guiyang, September 10 (XINHUA)--Thanks to the spread of science and technology in southwest China's Guizhou Province industrial and agricultural output has increased. In 1985 a peasant woman of Dushan County earned more than 13,000 yuan (3,500 U.S. dollars) growing mushrooms. Like her, peasants living in remote mountain areas of the province believe that science and technology can help them to realize their dreams to be wealthy, according to a provincial official. In the past two years, technicians of the provincial rural popular science association went to the area and trained 600,000 peasants, the official said. In Dabang village of Xishui County they established 11 peasants' science associations, with a membership of 178. In addition, there is a training center in the village, which has turned out 540 technicians in various fields for the county since 1985. To date the province has 2,340 rural popular science associations distributed in districts and villages, which publish 4,000 varieties of popular science books and newspapers for the peasants, the official said. [Text] [Beijing XINHUA in English 0814 GMT 10 Sep 86] /8309

CSO: 4020/1

CORN EXPORT EFFECTS ON STOCK PRODUCTION ANALYZED

Beijing ZHONGGUO SHANGYE BAO in Chinese 15 May 86 p 2

[Article by special correspondent Shi Xizhi [2514 5054 0037] under the rubric: "Market Trends": "Sharp Rise in Corn Exports Brings Drastic Increase in Feed Prices: The Hidden Declining Trend in Hebei Hog and Chicken Production"]

[Text] In 1985 Hebei exported 500,000 tons of corn. In the first 2 months of 1986 Hebei has already accomplished its export assignment of 128,682 tons of pure yellow corn. This represents a 4.3 -fold increase in exports over the same period of 1985. In addition, we have arranged to export 90,000 tons more pure white corn and variegated corn than was planned for. Estimates in the areas concerned show that this year Hebei's total corn exports may surpass the critical mark of 800,000 tons, and will increase 60 percent over 1985.

Given the sharp rise in the quantity of corn exported and the expansion of the feed processing industry, the price of corn in Hebei's domestic markets is now increasing drastically. The Hebei Livestock and Aquatic Products Bureau said in a report of its findings that after October 1985 the per-kg price of blended chicken feed rose 0.10 to 0.16 yuan and the price of corn rose 0.12 to 0.16 yuan in Shijiazhuang, Hengshui, Xingtai, and Tangshan. The major causes of the rise in feed prices were the significant increase in the scale of corn exports for foreign trade, and the increasingly aggressive competition everywhere to buy corn, which forced up the price of the commodity. For example, we made eastern Hebei a corn export base, and in 1985 the province bought 500,000 tons of corn from Tangshan and other prefectures and cities to export for foreign trade. The price was as high as 0.36 to 0.38 yuan per kg, and this caused a general rise in the selling price for corn all over the province.

The sharp rise in corn and feed prices inevitably greatly increased the cost of raising pigs and chickens so that profits from livestock breeding dropped notably. In addition, pork and chicken circulation channels are obstructed: both inside and outside Hebei cold-storage facilities for pork are full in the large and medium urban market areas, and market sales have dropped off. In live-hog and fresh-egg market areas prices have taken a downward trend: the county food sector is making no profit on operations and has been compelled to force down purchase prices for live hogs and fresh eggs. This has led to low morale among people raising hogs or chickens. People increasingly prefer to consume the eggs rather than sell them, so the quantity of commodity eggs has declined correspondingly. To different degrees, all of these factors are concealing the critical declining trend in hog and chicken production.

To counter this situation, Hebei's state-run commercial food sector is now speeding up the adoption of remedial measures to support hog and egg procurement in production areas and to aid hog and chicken production.

INTERVIEW ON FERTILIZER PRODUCTION, SALES, USAGE

Shijiazhuang HEBEI RIBAO in Chinese 16 May 86 p 2

[Article: "Improve Quality, Succeed at Joint Management, Achieve Comprehensive Coordination Among Fertilizer Production, Marketing, and Use--Hebei Provincial Department of Petrochemical Industries Director Zhang Jiashu [1728 1367 2885], Department of Agriculture Deputy Director Lu Yulan [0712 3768 5695], and Supply and Marketing Cooperative Economic Association Vice Chairman Geng Jirong [5105 4949 2837] Answer a Reporter's Questions"]

[Text] Question: How can we guarantee product quality in production?

Answer: We must rely primarily on enhanced enterprise management. On behalf of enterprise, the major departments responsible for the chemical industry in each prefecture and city must conscientiously enhance leadership and earnestly implement the economic responsibility system to further arouse productive initiative among enterprise staff and workers. We must focus on quality improvement, continue to practice comprehensive quality control, set into motion professional competition and comparative appraisal, and set about enhancing products to levels of excellence. In order to produce high-quality phosphate fertilizer, we must accomplish the "four maintenances" and "one comparative appraisal": we must maintain tight controls over ore so that no ore below the 24 percent grade gets into fertilizer plants; we must maintain production of scientifically compounded ores; we must maintain strict control over technological standards; and we must maintain efforts to strengthen postproduction management and improve the conversion rate. All fertilizer enterprises must rigorously enforce the quality inspection system and keep substandard products from leaving the plant. All phosphate fertilizer enterprises must conduct business strictly in accord with the "four maintenances" and produce phosphate fertilizer of 12 percent phosphate content or above. Finally, an examination and appraisal should be conducted once each season and the results circulated province-wide.

Question: What are the strengths and weaknesses of low-potency chemical fertilizers?

Answer: They can be differentiated only by comparison, and their strengths and weaknesses are also relative. Among the low-potency fertilizers, as far as ammonium hydrogencarbonate is concerned its molecular structure itself

determines a relatively low nitrogen content (17 percent nitrogen), whereas urea contains 46 percent nitrogen. If fertilizer application methods are inappropriate it easily decomposes and volatilizes, thus it is not as stable as urea: it has obvious, glaring weaknesses. However, so long as application methods are appropriate, and given equal quantities of nitrogen, ammonium hydrogencarbonate is as effective as urea. If you compare 3 tons of ammonium hydrogencarbonate with 1 ton of urea, the former surpasses the latter both in price and effectiveness. Three tons of ammonium hydrogencarbonate contain 51 effective nitrogen components and cost only about 450 yuan, whereas 1 ton of urea contains only 46 effective nitrogen components and necessarily costs more than 500 yuan. The consumers themselves are invited to do some serious calculations and decide whether to buy ammonium hydrogencarbonate or urea. Taking ordinary superphosphate as another example, although it is relatively low in effective phosphate content, in addition to water-soluble components its effective components include sulphur and calcium essential to agricultural crops. So long as it is applied suitably it is as effective as an equivalent application of ammonium phosphate. The per-unit cost of effective phosphate is also lower in superphosphate than in ammonium phosphate. Farming comrades say that if and when ammonium phosphate adversely affects agriculture, applying phosphate fertilizer can act as their ace in the hole. This makes sense.

Question: What is the state of fertilizer resources this year in Hebei?

Answer: Comparing 1986 with 1985, fertilizer resources in Hebei generally show domestic nitrogenous fertilizer holding steady, declining imports of ammonium phosphate, and a fairly major shortage of low-potency phosphate fertilizer. This year urea resources amount to approximately 730,000 tons and locally produced ammonium hydrogencarbonate totals 3.4 million tons; resources for both products are essentially on a par with 1985 levels. Imports of ammonium dihydrogenphosphate have been cancelled, reducing resources by 200,000 tons compared with 1985. Local production of ordinary superphosphate is a problem currently being studied. As of the end of April only 10 of China's 79 phosphate fertilizer plants were in production, and they had produced 80,000 tons of phosphate fertilizer--10 percent of the year's planned production. If, beginning in June, the 33 plants that have obtained production permits and the 11 plants that are going to obtain production permits all start up, by October of this year we will have only 800,000 tons including our current reserves. This is still 450,000 tons short of agricultural needs. Predictions generally are that by the wheat planting season a serious shortage of phosphate fertilizer will arise.

Question: How are services developing now with respect to fertilizer supply?

Answer: Now rural areas have established farm production services stations, through which farmers are provided with information, advice, and technical services. We have initiated soil testing to guide farmers in conducting scientifically formulated fertilizer applications. Farmers are required to make an appointment to order goods, and sales personnel deliver the goods right to the door. We have launched survey forecasting and are

conscientiously organizing the supplies of goods based on farmers' fertilizer requirements. Through various kinds of services we are actively supporting the rural commodity economy.

Question: What role does fertilizer play in agricultural production?

Answer: The experience of various world nations verifies that increasing fertilizer applications is the most outstanding and most effective way to increase the yield per unit of cultivated land. In the past 20 years or so gross world grain production has doubled and unit yields have improved remarkably. When analyzing the causes of increased world grain production the Food and Agriculture Organization of the United Nations reckoned that 50 percent was due to increased fertilizer application. In Shijiazhuang Prefecture an average of 216.9 jin of fertilizer is applied per mu of cultivated land and the per-mu yield is 1,170 jin, whereas in Zhangjiakou Prefecture, which applies the least fertilizer, 21.9 jin is applied per mu of cultivated land and the per-mu yield is only 227 jin. The facts show that increased fertilizer application plays an extremely important role in improving agricultural yields. Increasing fertilizer application, using the inorganic to enhance the organic, ensuring stable yields to promote equilibrium, and improving unit yields are strategic measures for agricultural development in Hebei.

Question: How do we apply fertilizer scientifically?

First, we must survey the soil and apply fertilizer based on the state of soil nutrients. According to a survey of soils in 118 counties, 65 million mu--about 70 percent of all cultivated land--has soil containing less than 10 ppm rapid available phosphorous. Increasing the application of phosphate fertilizer on this land would bring striking results. In particular, increasing the application of phosphate fertilizer most clearly results in increased yields on plots of land where a lot of nitrogenous fertilizer and little phosphate fertilizer has been used, and nitrogenous fertilizer has been applied appropriately. On plots of land that normally produce around 400 jin per mu, where the rapid available phosphorous content of the soil is 20 to 30 percent [as published], 20 to 30 jin per mu of phosphate fertilizer should be applied. Where the soil contains 10 to 20 ppm of rapid available phosphorous, 40 to 60 jin of phosphate fertilizer should be applied, and where it contains less than 10 ppm of rapid available phosphorous, 60 to 80 jin of phosphate fertilizer should be applied. If we consider the ratio of nitrogen to phosphorous, we can synthesize production practices based on recent Hebei test data, divide cultivated land into high-, moderate-, and low-yield areas, and separately determine a relatively rational nitrogen-phosphorous ratio for each different production area. In high-yield areas producing 600 to 800 jin per mu a nitrogen-phosphorous ratio of 1:0.25 is suitable; in moderate-yield areas producing 300 to 600 jin per mu a ratio of 1:0.5 is suitable; and in low-yield areas producing 200 or 300 jin per mu a ratio of 1:0.5 to 1:1 is suitable.

Second, we must apply fertilizer in accordance with crop characteristics and the specific properties of the type of fertilizer concerned. Nitrogenous fertilizer produces outstanding results with wheat, corn, paddy, and cotton, whereas on legume crops little or no nitrogenous fertilizer and relatively

more phosphate and potassic fertilizer should be applied. Root tuber crops (potatoes, Chinese yams) should also receive more phosphate and potassic fertilizers. Ammonium nitrate is unsuitable for use on paddy fields, and luhua andan [3048 0553 6941 3225] fertilizers are not suitable to be used on tobacco, hemp, potato, or grape crops. It is inadvisable to apply too much highly concentrated chemical fertilizer, such as ammonium dihydrogenphosphate, at one time: 20 to 30 jin at a time is best. If too much is applied the crops will be damaged.

Third, the fertilizer must be applied at the critical time for the crops. All crops have a critical time period during which they need fertilizer, and if one jumps the gun on this critical period or lets it slip by the fertilizer will be less effective. For example, on wheat the best results are derived from nitrogenous fertilizer if it is applied when the crop is turning green and during the jointing stage: 1 jin of ammonium sulphate can increase the wheat yield by 4 jin or so. If the same fertilizer is applied during the booting stage each jin of ammonium sulphate can increase the yield by only 3 jin; at the earing stage it can increase the yield by 3.4 jin. Phosphate fertilizer should be applied during and after the seedling stage. For corn the best results from nitrogenous fertilizer occur if it is applied before the tassels appear. Equal applications of nitrogenous fertilizer after the final singling of seedlings and before the tassels appear is not as effective as one application prior to the tassling. For paddy the greatest application of nitrogenous fertilizer should occur during the tillering stage. For cotton the quantity of nitrogen required during the period from the squaring stage to the beginning of the flowering stage accounts for 50 percent of what is needed during the growing period, and fertilizer is best applied at that time. As far as application methods are concerned, we should switch from surface to deep application, and from broadcasting to furrow or hole application in order to get the most out of the fertilizer.

Question: How can we mobilize farmer initiative to invest in and prepare fertilizer?

Answer: In the past couple of years, due to changes in grain procurement methods and the inability of agricultural services to keep up, in some places reduced investment in farming, extensive cultivation, abandonment of cultivated land, and destruction of land resources has cropped up among a few farmers. We hope that leaders at all levels will conscientiously carry out pricing policies, alleviate the farmers' burdens, see to it that industry aids agriculture, and establish sound systems of rural services. We also hope they will implement policies and measures to safeguard agricultural and land resources, publicize the argument that increased output can be obtained only through increased investment, and mobilize the vast masses of farmers to invest in and prepare more fertilizer and apply more organic fertilizer. This will foster improved soil fertility and guarantee increased agricultural production and income.

12510
CSO: 4007/430

HEBEI

BRIEFS

WHEAT PROCUREMENT--Hebei Province reaped a bumper wheat harvest this year. As of 15 August, the province had stored 1,240,000 tons of wheat purchased according to contracts, thus overfulfilling this task; and the peasants purchased more than 212,000 tons of wheat on the province's behalf. [Summary] [Shijiazhuang HEBEI RIBAO in Chinese 20 Aug 86 p 1 SK] /8309

CSO: 4007/1

FARM MECHANIZATION REFORM DISCUSSED BY FORMER OFFICIAL

Heilongjiang NONGCUN FAZHAN YANJIU [STUDIES ON RURAL DEVELOPMENT] in Chinese No 3, 1986 pp 45-47

[Interview of Ma Jing, former director of the Heilongjiang Farm Machinery Bureau by staff reporter: "Comrade Ma Jing Discusses Farm Mechanization Reform"; date and place not given]

[Text] Not long ago, one of our staff reporters visited Comrade Ma Jing [7456 2417] to discuss such issues as the status of and remaining problems in the farm mechanization reforms that have been going on in this province for more than a year, along with major tasks in farm mechanization work for 1986.

[Question] As reform of the rural economic system continues to progress, Heilongjiang's agricultural mechanization work has also undergone a series of reforms. How do you view the post-reform status of agricultural mechanization?

[Answer] As to how the issue of post-reform agricultural mechanization should be treated, some comrades are not entirely in agreement. I believe that agricultural mechanization is undergoing stable, healthy development during the reforms.

First, farm machines are emerging as commodities, allowing peasant households to purchase them and mobilizing the peasants' enthusiasm for carrying out their own farm mechanization. Operational modes have also changed from the solely collective operations of the past to diversified modes coexisting, so that farm mechanization is now vital and thriving. According to statistics as of late November 1985, the province has 202,000 small, medium, and large tractors, with 4,878,000 horsepower. This is a 92.7 percent increase over the end of 1982 in the number of tractors, and a 23 percent increase in horsepower. At the same time, there have been changes in model structure. In the 1970's Heilongjiang had primarily large and medium-size farm machinery, the ratio of large to medium to small machinery being basically 1:1:1; in 1985 that ratio was 1:2:7. This change in model structure not only facilitates ensuring that the demand for mechanization of field operations is met but is also beneficial in expanding the realm of farm mechanization. It is suited to making adjustments in rural industrial structure and provides the conditions for developing a commodity economy; it is also suited to the actual situation of land being worked by individual households and improves the production capacity of peasant households.

Second, agricultural mechanization is expanding from planting alone into the areas of agriculture, forestry, animal husbandry, fishing, industry, commerce, transport, construction, and services. In 1985, farm mechanization was more and more widely used in rural transport, tree planting and afforestation, harvesting and storage of forage grass, processing of agricultural and sideline products, the construction materials industry, house-raising of poultry, tending of fishponds and so on. According to statistics as of late October, mechanized operations in these fields had reached 170 million standard mu, accounting for 35.6 percent of all mechanized operations.

Third, a network of farm machinery services is beginning to take shape, meeting the demand for many-tiered dealings in farm machinery. Of the province's 1,146 towns and townships, 966 now have farm machinery management services stations; various types of service organizations have been set up in 40 percent of the villages; and there are now more than 31,000 specialized farm machinery services households engaging in hired plowing, transport, repair, and processing, thus creating the beginnings of a multi-tiered farm machinery services network.

Fourth, farm machinery enterprises and businesses have strengthened their activity and become more vital through reform. For a long time in the past the province's 95 county-level farm machinery building and repair shops relied on state subsidies to get by; in 1982 their losses reached 9,515,000 yuan. After the economic relaxation and invigoration that began in 1983, their operating results became better and better; that year their losses dropped to 4,463,000 yuan, while in 1984 their losses changed to profits, putting an end to a 19-year history of losses, and by the end of the third quarter of 1985 their net profits were 1,954,000 yuan. In 1984, the province's 83 farm machinery supply companies realized 4,977,000 yuan in profits, and in 1985 they broke through the 6,000,000 yuan mark, reaching a historical high.

It can be affirmatively stated that the main trend in Heilongjiang's farm mechanization is good. As adjustments are made in the rural industrial structure and as a commodity economy develops, farm mechanization will be pushed into an ever more important position, and the province's farm machinery enterprises and businesses will experience a period of broader, more penetrating, and higher growth.

[Question] You just said that farm machinery operating modes are changing from one type of operation to many types coexisting. Would you please discuss these different operating modes?

[Answer] Farm machinery operating modes in Heilongjiang Province have undergone several reforms. Up until the Third Plenum, there was basically only the collective model operations. Since 1983, with reform of the rural economic system, the operating modes for farm machinery have also changed, with state, collective, cooperative, and household operation coexisting. In the province at present, the proportions of operations by large and medium-size tractors are 77 percent for household operations under household ownership, 17.4 percent for cooperative operations under joint-household ownership, 5.3 percent for contract or centralized operations under collective ownership, and 0.3 percent for station operations under state ownership.

[Question] What do you believe is the most important problem at present?

[Answer] First, I don't think the usefulness of farm machinery is adequately exploited, especially in the case of large farm machinery and implements. Although there has been a great increase in the number of tractors in recent years, the total volume of operations has increased very little, and the horsepower load has decreased tremendously. The volume of field work in particular has still not returned to the 1982 level. According to statistics, the province's volume of field operations was still 8 percent lower in 1985 than in 1982. In 1985, there were declines in 31 counties in the volume of three operations: machine sowing, cultivation, and plowing under in the fall. Utilization of large machinery is especially poor, and there has even been an outflow of large tractors from some counties in miscellaneous grain regions and mountainous and semimountainous areas, with many villages bereft of large tractors, which has had an impact on agricultural production. In some places the soil has not been turned over for 2 or 3 years now; old-fashioned farm implements are used for mounding, and muddipping, with very little plowing. In some places the soil has already hardened and the "three ponds" have been restored, with reeds, garland chrysanthemums, and lettuce taking over in ponds. If this problem is not resolved, it may affect the province's grain production and rural economic development.

Second, the relaxation of controls has meant a decline in farm implement technology. During the process of reforming the ways in which farm machinery are used, some comrades believe that it is not necessary for us to control machinery contract operations or household operations under household ownership, that it is enough for services to be provided properly, with services replacing control. In many places, after the farm machinery brigades were disbanded, no corresponding village-level management services organization was established, so that no one was seeing to the management of farm machinery at the village level. This loosening of management has brought about an increase in the farm machinery accident rate. In 1985, 71 people were killed in the province, a 24 percent rise over 1984. There has been a clear decline in the technical levels of farm machinery; according to surveys in a number of counties, 60 percent of the caterpillar tractors are operated despite defects, 10 percent are out of operation, and only 30 percent meet technical standards.

Third, the steps taken to loosen up and invigorate the farm machinery enterprises have not been big ones; many enterprises lack capacity for self-development and do not have enough reserve strength. Some farm machinery manufacturing and repair plants to date have no products in demand; their management is chaotic, product quality is low, consumption is high, and economic results are wanting. Some even continue to suffer losses. Some farm machinery supply companies do not have up-to-date information, their channels of circulation are blocked, they have slow fund turnover, their management costs are high, and their economic results are low.

[Question] To deal with these problems, what do you think are the areas to be concentrated on this year?

[Answer] In terms of production, we must first focus on the inadequate mechanization of grain production. The key here is to concentrate on mechanized

production of wheat and soybeans, corn, and rice. In areas growing wheat and soybean, the experience of the Keshan Farm and Keshan County must be disseminated, and a cultivation system combining overturning, loosening, and harrowing should be implemented along with a crop-rotation system, according to local conditions. Standardized operations and comprehensive measures to increase yield should be carried out to raise wheat and soybean unit yields and quality and improve the stability of yields per mu. In miscellaneous grain areas where corn is the main crop, actual local conditions should be followed in enthusiastically promoting the dry-cropping technology of moisture-retaining soil preparation, moisture-saving sowing, and moisture-storing deep hoeing as used in Shuangcheng County and Zhaozhou Chaoyang Township, in order to expand the area of mechanized corn sowing, create experience in high yields, and achieve new developments in mechanized corn sowing in the province this year. In rice-growing areas, the Hailin County's techniques of growing seedlings in grid trays and transplanting them mechanically must be enthusiastically popularized to promote increased paddy production.

This year the volume of field work should not only be restored to the historical high, but new breakthroughs should be made, new production results achieved, and economic returns increased.

In terms of perfecting the operating modes, they should be guided gradually towards cooperative operations, in keeping with local conditions, starting from reality, and maintaining diversification. Centralized and contractual operations under the system of collective ownership should be consolidated and perfected; the development of diverse forms of cooperative and joint operations should be encouraged; the policy of allowing individual peasants to purchase and operate farm machinery should be continued; specialized farm machinery households and mechanized household farms should be supported. As production is specialized and the socialization of services grows, individual farm machinery operations should be guided and encouraged on the basis of the will of the masses so as to gradually implement diversified cooperative and joint operations.

The solution for those villages which now have no caterpillar tractors is as follows: first, the township (town) farm machinery management services station may call its outstanding loans, purchase machinery, and give priority to providing substitute plowing services to peasant households in those villages having no tractors. Second, tractor aid may be organized through neighboring villages, with plowing or substitute plowing contracts being signed. Third, the villages may use the money from resale of equipment and some investments for impoverished districts to purchase new equipment to provide substitute plowing for the peasant households.

In terms of management, the top priority in farm machinery work is to improve farm machinery management. Regardless of the mode of operation, if management is poor it is impossible to take advantage of farm mechanization. Management work should now focus on the following tasks: turning purely administrative measures into a comprehensive administrative method combining administrative, legal, economic and technical services. Not only must the needed administrative and management work not be weakened, it must be strengthened; counties, townships (towns), and villages should all have full-time personnel to handle this.

Township (town) farm machinery management services stations must assign special resources to see to management, and services must not be allowed to replace management. Once farm machinery has become a part of every household, exclusive reliance on administrative control will be unable to meet the demands of the new situation, and it will be necessary to establish a complete regulatory system, strengthen legal control, and institute legal mechanisms. We have been slow in undertaking this work. This year, joint surveys should be carried out from the province down to the counties to set and strengthen a number of farm machinery control regulations to give them legal force. At the same time, various economic measures must be summarized and applied, such as the economic responsibility system, a system of rewards and penalties, etc., to promote experience in farm machinery management and push it ahead. In addition, broad development of technical training, dissemination of models, and consulting services will promote improvements in management levels.

In terms of farm machinery services, construction of the farm machinery services network must be strengthened. At present 20 percent of the province's towns and townships still have not set up farm machinery services organizations. In keeping with the principle of state, collective, and individual together, a policy of "whoever starts an enterprise should run it and reap the profits" should be implemented, making the best use of time and creating conditions for the orderly establishment of what needs to be established.

The town and township farm machinery management services stations should not be transferred to lower levels. The leadership systems of those stations that have already been transferred to lower levels should be complemented and improved. Twofold leadership, by the county farm machinery bureaus and the township governments, should be implemented, with a clear division of labor and responsibility between the two, so as to take advantage of the functions of the township farm machinery management services station; for those stations that have not been reassigned to lower levels, the provincial government has already made it clear that there are to be no further reassignments.

[Question] As regards to the issue of perfecting the modes of farm mechanization operating modes, could you discuss these measures more concretely?

[Answer] For existing contractual operations under the collective ownership system, we must see to concentrating our forces and perfecting the contract responsibility system. The village farm machinery services teams should certainly be consolidated and run properly, giving priority to agriculture, providing comprehensive services, with independent accounting and responsibility for profit and loss, gradually establishing an economic entity, and exploiting their dominant role in farm mechanization. Regardless of whether contracts are given to the team, the group, or the individual, they should not be resold. If the contract period is too short, it should be extended; contracts should be for a minimum of 3 to 5 years so as to solve the problem of jerryrigged machinery. Reasonable contract costs should be taken out and adjustments made in charges that are too high or too low. There should be special management and utilization of the depreciation and overhaul costs put aside; these funds are not to be diverted. Overhaul costs should be the subject of a team (group) contract to ensure regular repair of engines. The internal distribution system

should be strengthened and remnants of egalitarianism overcome. Distribution should be according to work attendance, technical levels, scope of responsibility, and the amount of contribution so as to fully mobilize contractor enthusiasm.

For cooperative operations by joint households, the impact of large farm machinery can be fully exploited; this is a new mode of operations created by the masses, and it should be enthusiastically encouraged to promote its consolidation and development. Various forms of cooperation and joint work should be recommended; in particular, the conditions must be created and positive leadership provided to implement full-fledged joint household operations on the basis of voluntarism and mutual benefit. The various internal systems of production, finance, distribution, and democratic management for cooperative operations should be established and strengthened as quickly as possible, gradually establishing a cooperative fund system to prevent the dissipation of resources and ensure maintenance, renewal, and expanded reproduction of machinery.

Mechanized household farms and specialized farm machinery households are new to the rural scene; they should be enthusiastically supported and steadily developed. They should be helped with the training of operating, repair, and management personnel in order to improve operations management, raise technical levels, increase economic returns, and get them to better serve as models. Conditions should be created for ordinary farm machinery households to utilize large-scale machinery, with expanded services and operational range, to guide them in developing toward specialized farm machinery households or specialized commodity grain households. For those households without resources to operate equipment that is difficult to maintain and which has an impact on production in their village, machinery and implements may be taken back, through negotiation and voluntarily, to be operated on a contract basis by the village. Recovery of small numbers of large-scale farm machinery and implements should certainly be accompanied by conscientious ideological work, with policies clearly discussed, so as to avoid the appearance of a spirit of "Indian giving," arbitrariness, and other tendencies. Cases of excessively low pricing and excessively long repayment schedules should be reexamined by the appropriate personnel of the township and village governments and organizations to find a reasonable solution.

State-owned and station-operated farm machinery should be better managed and utilized and conditions created for positive growth and expansion. In particular, the villages in mountainous and semimountainous regions are small, and the operation of large-scale machinery where it is much needed should be further developed. In villages without the resources to operate such large tractors, village stations may be set up. Areas owing outstanding sums to the state may have their machinery recovered, to be operated by the township farm machinery services station, to provide substitute plowing services for the masses.

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CSO: 4007/481

RESULTS ASSESSED ON STATE FARM MANAGEMENT REFORMS

Beijing RENMIN RIBAO in Chinese 10 May 86 p 2

[Article by XINHUA reporters Wang Laixi [3769 0171 0823] and Peng Yi [1756 3015]: "The First Year of Organizing Family Farms: A Report on the Results Operating System Reforms in Heilongjiang Reclamation Areas"]

[Text] One year has already been completed in the effort to initiate family farming throughout Heilongjiang state farms, and within and outside the reclaimed areas, there is great interest in the results and prospects for reform. Recently, reporters surveyed eight state farms--Suibin, Qianfeng, Longtou, Shuangyashan, Hongwei, 852, 854, and 857--and visited 41 family farms. They consulted a large volume of data, and facts convincingly bear out that initiating family farming on state farms is advantageous in a way that could never be matched under the former pattern of production and operation.

I. Vitality and Energy

In a year of severe disasters, results varied greatly. In 1985 over 137,000 family farms of all sorts appeared in Heilongjiang reclamation areas. Of these, 122,000-plus were growers operating on a total 21.51 million mu, or 84 percent of all arable land. The family farms carried out policies of "ownership by the whole people, household operation, planned guidance, independent accounting, and individual responsibility for profits and losses."

In 1985 severe natural disasters plagued the reclaimed areas and affected 16.46 million mu, or 71 percent of the sown area. Of this, there was no harvest on over 3.97 million mu of land, but total yields of grain and legumes approached the levels of the previous year. The gross value of industrial and agricultural output rose 8.1 percent over 1984, operations proceeded evenly, and there was a slight surplus. Sixty-four percent of the family farms profited.

At 4 state farm administration offices on the Sanjiang Plain--Hongxinglong, Baoquanling, Jiansanjiang, and Mudanjiang--the reporters found out that in 1981 the 50 state farms administered by those offices experienced severe floods and waterlogging and produced a gross grain and legume yield of only 900 million kg. Forty-five state farms incurred losses and the overall deficit totalled 370 million yuan. By contrast, when this area met with

similar natural disasters in 1985 the gross grain and legume yield reached 1.67 billion kg (86 percent more than in 1981), only 16 state farms faced losses, and the total deficit amounted to only 20 million-plus yuan. This miracle was created largely by the 90,000-plus family farms. When waterlogging occurred in the spring and summer everyone on the family farms, all ages and sexes, went out to the fields and braved the rain day and night to drain off the water. During the wheat harvest season there was an unbroken spell of wet weather and many family farms propped up plastic sheets to keep out the rain, turned over the grain, and used radiated heat, essentially forestalling wheat mildew and rot.

The masses themselves raised 40 million yuan and in one year made great efforts to organized mechanization. In the past, agricultural mechanization on state farms relied completely on state-funded equipment: "the state puts up the money, the workers till the land." This old convention has now been broken. Previously, Shuangyashan State Farm possessed only 56 combines and could not harvest all the wheat once the rainy season began. Last year, family farms on this state farm raised 520,000 yuan on their own and purchased 13 combines, enhancing their harvesting capacity. During the wheat harvest this state farm was also beset with rainy, gusty weather, but was nevertheless able to reap a good wheat harvest. Based on partial statistics, in 1985 family farms in the entire reclaimed area raised a total of over 40 million yuan on their own and purchased 3,210 tractors, combines, and farm vehicles of all sorts. In the previous 30 years the state had to set aside about 70 million yuan per year to buy farm machinery for the reclaimed area, whereas in 1985 the state made essentially no such investment. This is unprecedented.

Every family has a farm manager, every household handles accounting. In the past only a single farm manager attended to affairs on state farms. Now the situation has changed and there are thousands of small farm managers on family farms to worry about things. At the time of the reporters' investigation the state farms were just conducting the 1985 financial accounting. Family farm managers were often observed handling their own account books, comparing accounts with production team accountants, and, in some cases, uncovering mistakes in the accountants' books. Many people who in the past knew only how to live and draw wages are now talking about "investment," "costs," and "yield."

Every family runs a farm and employment is no longer a concern. In family farm operations each state farm divides the land not only among regular staff and workers, it also apportions a certain quantity of land among dependents and among sons and daughters who are not yet employed. Some state farms also assign a share of land in advance to middle-school students who are about to graduate. This way there is no need for the state to approve quotas, the state farms do not issue wages, and the "employment troubles" faced by a great many children of staff and workers in reclaimed areas are readily resolved. In 1985 the reclaimed areas absorbed 73,000 dependents and as-yet-unemployed youth to take part in farm production labor.

When there are rights of initiative there are many ways of doing things. With family farms there is no way that staff and workers can go to the fields every day and squander their efforts indiscriminately as they did before. As soon

as the busy season is past they can turn their attentions to production projects beyond the fields. Of the family farms investigated by these reporters, whether run by individual or joint households, most worked on more than one job simultaneously. In many cases the income from sidelines on family farms exceeded that from cultivation. In 1985 there were more than 44,000 staff members and workers throughout the reclaimed areas who switched from grain and legume production to other production and service fields. The number of staff and workers on construction teams in the reclaimed areas increased 30 percent in 1985 over 1984 and output value doubled. Cash crop area expanded 44 percent and animal husbandry also grew considerably.

II. Problems and Investigations

In the course of gathering material, these reporters conducted an intensive investigation into the three problems most talked about in society.

Can enthusiasm for household operation be linked to the advantages of mechanization? In Heilongjiang more than 80 percent of the cultivated land is planted with wheat and legumes and over 80 percent of production therefrom employs mechanization. This is an advantage enjoyed in the Heilongjiang reclamation areas. In 1985 the vast majority of wheat and legume production was contracted to family farms. Of this, close to 20 percent of mechanized households operated with a complete set of farm implements on a fair-sized stretch of land and had already integrated the two satisfactorily. Though the vast majority of family farmers labor enthusiastically, some are unmechanized or incompletely mechanized. Contradictions frequently appear between mechanized and unmechanized households over the time frame for plowing on behalf of the latter and over the quality of work. Because of this, some comrades feel that wheat and legume production is incompatible with family farm management and that plowing teams or major contracting units should be restored.

Suibin and Qianfeng State Farms have come up with a kind of loose cooperative association that satisfactorily resolves this contradiction. Their method is as follows: a certain number of mechanized and unmechanized households jointly till 2,000 to 3,000 mu of contiguous land. Thus the machinery essentially forms a complementary set, mechanized tasks are unified, and there is integrated implementation of technical measures to increase yields. However, household management and independent household accounting are preserved, and inter-household plowing arrangements and labor exchanges are both done based on stipulated fee payment. This kind of cooperative association involving independent household operation and coordinated production is similar to "farm machinery circles" abroad: it maintains both the appropriate scale for mechanized operation and the rights of independent operation on the family farm. The cooperative association on Qianfeng State Farm also selects a temporary accountant for the busy season to coordinate production among all the households. Everyone consciously accepts this coordination and the farmers rarely suffer from contradictions.

Has the state of farm implement technology declined? Some people say: "After agricultural implements are transferred they are run into the ground and worn down to scrap iron in a couple of years." What are the facts? These

reporters conducted an investigation on Shuangyashan, Suibin, and Qianfeng State Farms. Taking into consideration repair cost investment, in 1985 the proportion of intact farm machinery, the in-service rate, and time availability were all higher than the previous year.

On some state farms there are problems with the declining condition of vehicles. Based on what the reporters know, one reason for this is that many state farms, after transferring possession of the farm implements to staff and workers, completely washed their hands of the matter and in some instances even dismissed maintenance team leaders from farm machinery units and production teams. Another reason is that in the first year staff and workers were short of money on hand and reduced vehicle maintenance as far as possible. A third reason is that family farmers worried that policies would change and feared that the state farms would take back the vehicles, so that if they conducted repairs themselves the money would be wasted. This latter is the primary reason.

How are we to handle the "huge profits and huge losses" on family farms? These "huge profits and huge losses" are known locally as "bright red and vivid white". On the one hand this refers to the vast disparity in profits and losses among family farms, and on the other hand it points up the great fluctuation in income between years of bumper harvest and crop failure. Within a single team the reporters observed family farms that profited several tens of thousands of yuan and those that lost several tens of thousands of yuan. Suibin State Farm did not "pinch back" or apply "equalitarianism and indiscriminate transfer of resources" to family farms that profited significantly; rather, it persevered in implementing the policy that "for those who deliver a sufficient amount to the state and the state farm, all surplus may be retained for personal use." Simultaneously, Suibin mobilized these households to deposit a portion of the surplus in individual accounts with the state farm, and paid them interest at a rate higher than the regular savings deposit rate. When faced with crop failure and losses or with unforeseen mishaps the households can withdraw and use the money at any time. In addition, for family farms that suffer severe losses and owe money, many state farms have adopted methods to guarantee daily necessities, ensure production, and assure that debtors are not pressed for payment. This gives some older staff and workers a "feeling of security."

The above problems, which have appeared during reforms in the Heilongjiang reclamation areas, have not been entirely resolved. However, if we rely on the masses and probe ceaselessly in practice, these problems will not be difficult to solve. The prospects for family farms are encouraging.

12510

CSO: 4007/419

BRIEFS

WHEAT PROCUREMENT--Heilongjiang Province to date has procured more than 310,000 tons of wheat, which only accounts for 18.3 percent of the total volume fixed by purchase contracts signed early this year, because of the flood disaster in some areas during the harvesting season. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 0900 GMT 1 Sep 86 SK] /8309

WHEAT HARVEST--Heilongjiang Province has basically completed wheat harvesting. As of 5 September, some 29 million mu of wheatfields had been reaped, accounting for more than 99 percent of the wheatfields under harvest. This year the province's wheat sowing acreage was 29.29 million mu, more than 1 million mu less than last year. Thanks to good management, the total output is expected to approach last year's figure. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 2100 GM T 6 Sep 86 SK] /8309

CSO: 4007/1

BRIEFS

COMMERCIAL FOOD GRAIN BASES--Zhengzhou, September 7 (XINHUA)--Henan Province will, in the next five years, invest 300 million yuan in setting up 40 commercial food grain bases, mainly producing wheat, a local official said here today. This will bring the acreage under marketable food grains in Henan to 3.3 million hectares, or half of the province's total cultivated areas, the official said. Upon completion, these food grain bases will reap 55 percent of the province's grain output as against the present 42 percent, and they are expected to produce 60 percent of the province's marketable food grains. The official said that the 300 million yuan-investment will be used mainly to build and repair irrigation facilities, improve seed strains, popularize advanced farm techniques and control plant diseases and insect pests. [Text] [Beijing XINHUA in English 1027 GMT 7 Sep 86] /8309

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HUBEI

BRIEFS

WATER CONSERVANCY PROJECTS--According to incomplete statistics, Hubei Province has increased its ability to store, draw, and supply water by 150 million cubic meters and increased and improved its irrigated areas by 2,307,000 million mu. At the same time, the province has resolved the difficulties of 330,000 people and 150,000 head of cattle in drinking water. [Summary]
[Wuhan Hubei Provincial Service in Mandarin 1000 GMT 13 Sep 86 HK] /8309

CSO: 4007/1

SPECIAL LOANS FOR GRAIN FARMERS ANNOUNCED

Changsha HUNAN NONGYE [HUNAN AGRICULTURE] in Chinese No 5, 1 May 86 p 2

[Article by Li Lingming [2621 7227 2494], of Hunan Agricultural Bank, under the rubric "Rural Policy": "Hunan Agricultural Bank and the Hunan Grain Bureau Are Jointly Initiating Discount Grain Loans for Rural Households that Have Grain Contracts Assigning Relatively Heavy Procurement Quotas"]

[Text] To stimulate farmer enthusiasm for grain cultivation and support development in Hunan grain production, Hunan Agricultural Bank and the Hunan Grain Bureau have jointly decided to extend 40 million yuan worth of discount grain loans throughout the province in 1986 to rural households faced with grain contracts assigning relatively heavy procurement quotas.

The target of these Grain Contract Procurement Quota Discount Loans is rural households that, calculated based on the household unit, in 1986 face assigned grain procurement quotas of over 200 jin per person in addition to tax grain. However, these loans will not be extended to rural households that have assigned grain procurement quotas of less than 200 jin per person, those that sell little grain to the state, or those that have no shortage of production funds. Based on the discount loan plan issued by the province, these loans will be granted by various local banks directly to the basic grain sector. They will become part of special farm and sideline product credit, and be administered as a separate account. In accordance with numbers issued by higher levels in the grain and banking sectors, the basic grain sector will coordinate with townships and villages and extend credit on the basis of the number of households with assigned grain procurement quotas. The credit will be granted to rural households that sell grain to the state, particularly aiding those that sell a great deal of grain. This credit must be earmarked for the specified purpose only, and no unit, sector, or individual may divert it for another use. Interest on these loans will be calculated at the favorable rate of 3 percent per month and will be paid by basic grain enterprises to local agricultural banks. These loans will be granted to rural households prior to the end of April 1986 and will be recalled when the early and mid-season paddy crops are laid up in August and September.

However, rural households that sell grain to the state but do not meet the above stipulations, those that have signed grain procurement contracts but do not meet the quantity standards described above, and those that either have not obtained or continue to have financial problems after obtaining discount credit production funding, can reapply to the agricultural bank or the credit cooperative for loans at interest. These will be given priority credit aid in order to ensure that we complete our grain contract procurement assignment throughout the province.

BRIEFS

COMBATTING DROUGHT--In the past 2 weeks, some 4 million people have been fighting drought each day in the rural areas of Hunan to ensure a bumper harvest of late rice, dry grain, and industrial crops. There has been little rain in most parts of the province in the past month, and the drought has become serious. Some 43,000 cadres have gone to the frontline to help the masses solve various difficulties. Some 140,000 diesel motors, 40,000 electric motors, and 200,000 waterwheels are now in operation each day in the drought-fighting effort. [Summary] [Changsha Hunan Provincial Service in Mandarin 2200 GMT 4 Sep 86 HK] /8309

GRAIN PROCUREMENT--Hunan has fulfilled 1 month ahead of schedule its task of procuring and storing early and mid-season rice. By 5 September, the province had stored over 2.85 million tons of grain, an increase of 44.3 percent compared with the same time last year. The quality of all the grain is of medium-grade and higher. [Summary] [Changsha Hunan Provincial Service in Mandarin 2200 GMT 11 Sep 86 HK] /8309

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BRIEFS

TRACTOR USE--Zhangchun, August 28 (XINHUA)--Peasants in northeast China have 124,000 tractors, nearly double what they had in 1982, an official of the provincial statistics bureau said today. During 1985, the official said, the capacity of agricultural machinery in rural Jilin jumped 21.5 percent to 6.4 million horsepower. Nearly 70 percent of the province's rural output is hauled by tractors, the official said. The official attributed the progress to the system of allowing peasants to farm on a household basis, which has made them willing to buy farm machines to boost output. Between 1983 and 1985, they said, individual rural families spent 300 million yuan on farm machines. [Text] [Beijing XINHUA in English 0952 GMT 28 Aug 86 OW] /8309

CSO: 4020/1

BRIEFS

IRRIGATION SYSTEM--Yinchuan, September 3 (XINHUA)--Some 150,000 of the residents of the Ningxia Hui Autonomous Region's arid south have clean drinking water for the first time. Thanks to the completion of a 170 million yuan (45.9 million U.S. dollars) water project, the largest in northwest China, "the people of this area will be able to raise themselves out of poverty within a few years," a provincial official said here today. "This will drive away the drought," he said of the new system, adding that it will enable the area's residents--mostly Muslims of the Hui ethnic minority group--to raise livestock and grow crops without fear of catastrophic weather. With a capacity of 22 cubic meters per second, the new system can pump water 380 meters above its source. The system covers five counties and a large state farm and can irrigate 15,000 hectares of land. The area it serves has few reliable water sources and very little rain, and as a result has made its residents among the poorest in China. The official predicted that the system will increase the value of the yield of every hectare in the area by 1,800 yuan (486 dollars) a year, and that user fees for the water would pay back the project's cost within ten years. Construction of the system began in 1978, bringing with it thousands of workers, technicians and engineers. [Text] [Beijing XINHUA in English 1746 GMT 3 Sep 86] /8309

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BRIEFS

FERTILIZER SHORTAGE--The XIBEI XINXI DAOBAO [Northwest Information Herald] publishes letters from various places in Shaanxi reporting a serious shortage of chemical fertilizer in many areas this year. According to the letters, Pucheng County is short of 9,000 tons; Fengxiang County is short of 2,000 tons of ammonium carbonate and 800 tons of urea; Qishan County is short of 2,600 tons of nitrogenous fertilizer and 4,600 tons of phosphate fertilizer compared with previous years; and Sanyuan County is short of 5,400 tons of chemical fertilizer. The paper appeals to the chemical production and supply and marketing departments, and other departments concerned, to pay attention to solving problems in production and sales of chemical fertilizer, so as to ensure the smooth progress of autumn sowing. [Text] [Xian Shaanxi Provincial Service in Mandarin 0200 GMT 16 Sep 86] /8309

CSO: 4007/1

GAINS ASCRIBED PARTLY TO BETTER FARMING TECHNIQUES

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER]
in Chinese No 4, 17 Apr 86 pp 2-3

[Article by Chai Langao [2693 5695 7559], Shandong Agricultural Office Farm Technology Station: "Five Key Measures that Increased Agricultural Output and Value During the Sixth Five-year Plan"]

[Text] During the Sixth Five-year Plan, agricultural production developed significantly in Shandong. In that five-year period gross output value rose approximately 8 billion yuan, an average increase of 1.6 billion yuan per year. In addition to other factors in increased output, the following five improvements in planting techniques were significant.

1. Continual Readjustment of Planting Composition As Needed

Based on commercial production requirements, during the Sixth Five-year Plan departments at every governmental and agricultural level changed their previous single-minded concentration on grain production and energetically expanded cultivation of cash crops that have relatively high output values. Comparing the latter period of the Sixth Five-year Plan with 1980, cash-crop area increased more than 18 million mu, with the fastest growth occurring in cotton cultivation. In 1984 cotton growing area was up 14 million mu over 1980 and annual output was 3 times greater. The switch from grain to cotton can raise output value by over 50 yuan per mu. Farmers use this capital to purchase chemical fertilizers, pesticides, and machinery, thus improving production conditions. This promotes improved yields overall in grain, cotton, oil-bearing crops, and other crops, and creates a beneficial agricultural production cycle. Toward the end of the Sixth Five-year Plan, the price of cotton declined and sales were poor, so Shandong promptly reduced its cotton area and actively expanded peanut cultivation. In 1985 peanut growing area was up nearly 4.7 million mu over 1984 and gross yield rose to approximately 650 million kg. There was an unbroken spell of wet weather from the last 10 days of September to the middle 10 days of November 1985, and sunlight was insufficient, resulting in low-quality cotton and vastly reduced yields. However, the peanut crop was affected relatively little, and under these circumstances peanuts brought in 50-70 yuan more per mu than did cotton. In addition, in 1985 ambari hemp growing area rose 1 million mu and tobacco and vegetable growing areas and output values both increased. In the past few

years we have also vigorously expanded orchards, and the gross fruit yield rose 30 percent from 1981 to 1985.

In grain production we have actively expanded cultivation of wheat, our principal crop, and have popularized interplanting and multiple cropping of wheat with cotton, peanuts, and vegetables, as well as autumn grain crops. In 1985 the multiple crop index was 6 percent higher than in 1980. Total grain fields in the province have declined 7 million mu, but gross yield has increased 7 billion kg. The wheat harvest area in 1985 was 4.5 million mu greater than in 1980 and the autumn sowing extended wheat cultivation nearly 10 million mu. In 1986 the gross wheat yield will be double that of 1980. The area planted in sweet potatoes, sorghum, and soybeans--crops with fairly low output values--declined somewhat, cultivation of summer millet was expanded on dry fields, and dry cultivation of paddy was extended on irrigated land. In 1985 the area sown in millet was up about 1.3 million mu over 1980 and model expansions of dry paddy cultivation reached 400,000 mu. The readjustment of planting composition helped to increase quantity and quality and improve dietary composition, and it fit in with the new circumstances of growth in commodity production.

2. Improvement in Production Conditions, Full Exploitation of Liquid Fertilizer To Raise Production

During the Sixth Five-year Plan, in the wake of the rise in peasant income there was a corresponding increase in investment in liquid fertilizer. In addition, implementing the production responsibility system stimulated peasant production initiative, and we took full advantage of the potential yield increases possible with liquid fertilizer use. During the Sixth Five-year Plan 100,000 electromechanical wells were added and irrigation and drainage machinery increased by a factor of nearly 4 million horsepower. To conserve water usage and make irrigation convenient, many farmers used pipe to substitute for ditches and employed spray irrigation instead of furrow irrigation. In the western part of Shandong full use was made of the advantages of river and lake irrigation, and wheat in the region along the Huang He was generally assured of 2 to 3 irrigations. Right now there are over 40 million mu of land in Shandong on which irrigation is ensured. As far as wheat is concerned, there are better than 25 million mu on which irrigation is guaranteed and another 15 million mu on which there are regular conditions for irrigation. This is the essential guarantor of high, stable wheat yields in Shandong.

During the Sixth Five-year Plan chemical fertilizer applications in Shandong rose over 1.6 million tons. Right now an average of 80-plus kg of chemical fertilizer is applied per mu of cultivated land, up more than 15 kg over the closing period of the Fifth Five-year Plan. Shandong leads the nation in both production and application of chemical fertilizer. In recent years we have also changed our past emphasis on nitrogen over phosphorus and we now apply over 2 million tons of phosphate fertilizer per year. Since 1981 applications of zinc fertilizer have been extended to more than 10 million mu of land in zinc-deficient regions. Following the use of soil survey results, applications of nitrogen, phosphorus, potassium, and trace elements are becoming more and more scientific and rational.

3. Prompt Supply of Improved Varieties

Since 1980 a total 670 million kg of improved crop varieties have been disseminated throughout Shandong, an average of 112.5 kg per year. This is more than double the average amount disseminated annually in the the 3 years from 1976 through 1978, prior to the 3d Plenum. The major improved agricultural crops have been essentially disseminated and the total improved crop area measures 143 million mu, or over 95 percent of the total sown area. In the past few years the popularization of wheat varieties Fu No 63, Jinan No 13, and Shandong Nos 1 through 7; corn hybrids Yandan No 14 and Shandong Nos 1 through 4; cotton breeds Shandong Nos 1 through 6; peanut varieties Haihua No 1 and "Hua"; have all directly stimulated the growth of agricultural production. The prompt supply of improved breeds is also an essential guarantor of readjustment in planting composition. For example, in 1985 4,000 kg of peanuts were supplied for planting, and this was sufficient to meet the demand for expanded peanut production.

4. Enthusiastic Dissemination of New Mulching Techniques

Mulching is a new technique that has arisen in recent years. In Shandong in 1985 mulching was performed on over 1.7 million mu of cotton fields, 1.1 million mu of peanut fields, 500,000 mu of vegetable fields and orchards, and 70,000 mu of wheat fields double cropped with a single mulching. Shandong leads the nation in total mulched area. Several years of experience verify that mulching can generally raise ginned cotton output by 15 kg per mu, peanut and legume yields by 90 to 100 kg per mu, and wheat output by about 100 kg per mu. When used in vegetable and melon cultivation mulching can not only increase output, it can also hasten market availability and improve value.

As for conventional techniques, in the past few years, through the efforts of numerous agricultural scientists and technologists, several major crops have been combined into a complete, targeted, standardized system of cultivation techniques and have been disseminated for use in production. For example, disseminating and applying a standardized, high-yield summer corn cultivation method that stresses improved compact breeds, prudent increases in density, and fertilizer applications in fixed quantities at fixed times has made high-yield fields out of some moderate-yield fields that had been hovering on the verge of progress. From 1980 through 1984 this method was disseminated to a total 23.43 million mu and produced an average per-mu yield of over 400 kg. Of this, in 1984 11 million mu of land produced over 400 kg per mu and 2 million mu of land produced over 500 kg per mu. Techniques of dryland wheat cultivation on infertile soil, late wheat cultivation, and intensive sowing on high-yield fields are also becoming more familiar and being applied in production.

5. Improvements in Blight and Pest Surveying, Reporting, and Control Methods

In the past few years the objects of blight and pest surveying and reporting in Shandong have grown in number, from 8 right after the founding of the PRC to 25 today. Beginning in 1981, to promptly and accurately issue blight and pest forecasts, crop protection stations began testing coded telegraph links

with local market survey and reporting stations and using mathematical statistics and electronic computers to conduct analyses. Beginning in the 1980's Shandong began to disseminate high-potency, low-toxicity, low-residual pesticides, and to use Chrysanthemum ester pesticides to replace organic chlorine pesticides. During the Sixth Five-year Plan there were 111.4 million mu of biologically controlled land in Shandong. Because the agricultural sector actively disseminated and popularized biological controls, developed technical contracting and technical services, switched pesticide types, and improved control methods, pesticide applications are declining year by year. In the 1970's Shandong used about 130,000 tons of chemical pesticides per year, and in 1984 we used only 74,000 tons. This not only improves control results and reduces investment, it also reduces pesticide poisoning.

12510

CSO: 4007/423

BRIEFS

YUNNAN LIVESTOCK PRODUCTION--Farm villages everywhere paid attention last year to expanding the livestock industry, and livestock industry output value rose. Calculated according to 1980 prices, Yunnan's livestock industry output value reached more than 1.7 billion yuan, an 8.4 percent increase over last year. The obvious special points in Yunnan Province's 1985 livestock industry growth are: (1) High economic benefits and obvious social benefits. Farm villages everywhere combined livestock industry growth with market demand, and energetically expanded edible meat livestock. Yunnan Province's total pork, beef, and mutton yields for 1985 reached 568,300, a 10.2-percent increase over the preceeding year and the highest record in history for Yunnan Province. (2) Livestock industry growth was combined with guaranteeing the steady increase of grain production and improving border and mountain area transportation conditions to expand the commodity economy. There was a greater increase in 1985 in work animals in principal grain production districts and in nationality districts. Compared with last year, there was a total increase of more than 171,000 head of work animals, which was 88.5 percent of Yunnan Province's total increase in the 17 prefectures and autonomous prefectures of Zhaotong, Qujing, Chuxiong, Wenshan, Honghe, Dali, Simao, and so on. [Text] [By Wang Weijin (3769 4850 4897)] [Text] [Kunming YUNNAN RIBAO in Chinese 11 Jun 86 p 1] 13152/12948

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